Acacia Miscellany 15. Five groups of microneurous species of *Acacia* (Leguminosae: Mimosoideae: section *Plurinerves*), mostly from Western Australia

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Abstract

Cowan, R.S. and B.R. Maslin. *Acacia* Miscellany 15. Five groups of microneurous species of *Acacia* (Leguminosae: Mimosoideae: section *Plurinerves*), mostly from Western Australia. Nuytsia 10 (2): 205-254 (1995). Five informal groupings of new and previously described species are reviewed, including a key to the taxa of each group and descriptions or re-descriptions of each taxon. The "*A. densiflora* Group" includes *A. densiflora* Morrison, *A. eremophila* W. Fitzg. and *A. mackeyana* Ewart & Jean White in addition to the following new taxa: *A. dissona* R.S. Cowan & Maslin, *A. dissona* var. *indoloria* R.S. Cowan & Maslin, *A. hadrophylla* R.S. Cowan & Maslin, *A. kalgoorliensis* R.S. Cowan & Maslin, *A. papulosa* R.S. Cowan & Maslin and *A. undosa* R.S. Cowan & Maslin. The "*A. ancistrophylla* Group" comprises two new species (*A. amyctica* R.S. Cowan & Maslin and *A. whibleyana* R.S. Cowan & Maslin), in addition to *A. ancistrophylla* C.R.P. Andrews which is treated here as consisting of three varieties (the typical variety, var. *perarcuata* R.S. Cowan & Maslin, var. nov. and var. *lissophylla* (J.M. Black) R.S. Cowan & Maslin). The "*A. enervia* Group" is made up of *A. enervia* Maiden & Blakely with two subspecies (the typical subspecies and subsp. *explicata* R.S. Cowan & Maslin), *A. lineolata* Benth. with two subspecies (the typical one and subsp. *multilineata* (W. Fitzg.) R.S. Cowan & Maslin, comb. et stat. nov.) and *A. inceana* Domin with two subspecies (the typical one and subsp. *conformis* R.S. Cowan & Maslin). The "*A. fragilis* Group" includes three new species (*A. aulacophylla* R.S. Cowan & Maslin, *A. consanguinea* R.S. Cowan & Maslin and *A. ophiolithica* R.S. Cowan & Maslin) in addition to *A. assimilis* S. Moore with two subspecies (subsp. *assimilis* and subsp. *atroviridis* R.S. Cowan & Maslin, subsp. nov.), *A. fragilis* Maiden & Blakely and *A. uncinella* Benth. Finally, the "*A. dielsii* Group" comprises two new species (*A. nivea* R.S. Cowan & Maslin and *A. obesa* R.S. Cowan & Maslin) in addition to *A. dielsii* E. Pritz. itself. Selection of lectotypes is recorded for the following taxa: *A. eremophila* W. Fitzg. var. *variabilis* Maiden & Blakely, *A. ancistrophylla* C.R.P. Andrews var. *lissophylla* (J.M. Black) R.S. Cowan & Maslin, *A. lineolata* Benth., *A. mackeyana* Ewart & Jean White *and A. assimilis* S. Moore.

Introduction

The principal aims of this paper are to describe new taxa ahead of their inclusion in the "Flora of Australia" treatment of *Acacia*, and to present re-descriptions of some previously described taxa related to the new ones; we have also lectotypified names where necessary.

Methods

Arrangement of the text. The taxa included here are all referrable to *Acacia* section *Plurinerves* (Benth.) Maiden & Betche and are treated in five groups, the "*A. densiflora* Group", the "*A. ancistrophylla* Group", the "*A. enervia* Group", the "*A. fragilis* Group" and the "*A. dielsii* Group". Apart from their globular heads on axillary peduncles these taxa have in common only their microneurous phyllodes (*cf.* Maslin & Pedley 1988 for definition), having usually numerous, closely parallel, longitudinal nerves with anastomoses absent or rare. It should be noted that these "Groups" are simply mnemonic devices adopted to bring together taxa that are considered to be most closely related to one another for purposes of communication. These are informal groupings and not all the taxa which could be referred to them are necessarily included herein. Furthermore, the "Groups" are sometimes separated by only small differences, especially in the case of the first three, and future classifications may well combine these into a single infrageneric taxon.

Taxonomic rank. Our approach to the application of rank is briefly discussed in Cowan & Maslin (1995).

Typification. Our approach to typification is discussed in Maslin & Cowan (1994b).

Conservation status. We have assessed conservation status of each taxon included in this treatment. In the case of Western Australian taxa we have used the Conservation Codes for Western Australian Flora (see end of this issue). For taxa occurring elsewhere in Australia we have used the conservation codings of Briggs and Leigh (1988).

Measurements. All measurements and observations were made from dried specimens unless stated otherwise.

The "Acacia densiflora Group"

Although they have no unique distinguishing characters, the species of this "Group" can be recognized in section *Plurinerves* by a combination of their tomentulose branchlets (except glabrous in *A. papulosa* and appressed-puberulous in *A. dissona* and some material of *A. eremophila*) with the indumentum often extending to the adaxial surface of the pulvinus, cucullate basal peduncular bracts and their small heads on short peduncles. The taxa referred to this Group include the following: *A. densiflora* Morrison, *A. dissona* R.S. Cowan & Maslin sp. nov. (including var. *dissona* and var. *indoloria* R.S. Cowan & Maslin var. nov.), *A. eremophila* W. Fitzg. (including var. *eremophila* and var. *variablis* Maiden & Blakely), *A. hadrophylla* R.S. Cowan & Maslin sp. nov., *A. kalgoorliensis* R.S. Cowan & Maslin sp. nov., *A. mackeyana* Ewart & Jean White, *A. papulosa* R.S. Cowan & Maslin sp. nov. and *A. undosa* R.S. Cowan & Maslin sp. nov.

Key to taxa of "*A. densiflora* Group"

1. Phyllodes terete to sub-terete
  2. Branchlets glabrous ..... 7. *A. papulosa*
  2. Branchlets hairy
    3. Sepals united for at least 1/4 their length
      4. Phyllodes with sharply to coarsely pungent, ± straight tips; peduncles hairy; pods hairy, not undulate ..... 1. *A. densiflora*
      4. Phyllodes with non-pungent, uncinate to sub-uncinate (sometimes straight) tips; peduncles glabrous or hairy
        5. Nerves *c.* 10, depressed below broad (several times width of nerves), raised inter-nerve spaces
          6. Pods glabrous, not undulate; phyllodes 2-6 cm long ..... 3a. *A. eremophila* var. *eremophila*
          6. Pods hairy, undulate; phyllodes 5-11 cm long ..... 3b. *A. eremophila* var. *variabilis*
        5. Nerves numerous, inter-nerve spaces scarcely wider than nerves ..... 3. *A. eremophila* (numerous-nerved variant)
    3. Sepals free or almost so
      7. Phyllodes not sharply pungent
        8. Pulvinus expanded at base, 0.5-2 mm long; mature phyllodes with raised nerves commonly paler than inter-nerve spaces ..... 2b. *A. dissona* var. *indoloria*
        8. Pulvinus terete, 1-3 mm long; nerves ± depressed, nerves and inter-nerve spaces uniform in colour
          9. Pods glabrous, not undulate; phyllodes 2-6 cm long ..... 3a. *A. eremophila* var. *eremophila*
          9. Pods hairy, undulate; phyllodes 5-11 cm long ..... 3b. *A. eremophila* var. *variabilis*
      7. Phyllodes sharply pungent
        10. Phyllode blades abruptly separated from both pulvinus and apex, commonly recurved, 7-30 mm long; heads 7-12-flowered ..... 6. *A. mackeyana*
        10. Phyllodes gradually tapered to pulvinus and/or apex, straight, 20-70 mm long; heads 15-22-flowered
          11. Phyllodes 3-7 cm long with the apex protracted into long spinose points; peduncles normally 0.5-1.5 mm long ..... 5. *A. kalgoorliensis*
          11. Phyllodes 2-4 cm long with the apex contracted to short pungent tips; peduncles 2-5 mm long ..... 2a. *A. dissona* var. *dissona*
1. Phyllodes flat
  12. Peduncles hairy ..... 1. *A. densiflora*
  12. Peduncles glabrous
    13. Pods not undulate; phyllodes oblong-elliptic, 5-25 x 2.5-5.5 mm ..... 4. *A. hadrophylla*
    13. Pods undulate; phyllodes linear to linear-oblanceolate, 20-45 x 1-4 mm ..... 8. *A. undosa*

1. Acacia densiflora Morrison, Scott. Bot. Rev. 1: 96 (1912); Trans. & Proc. Bot. Soc. Edinburgh 26: 51 (1917)

Typus: Kellerberrin, E Avon district, Western Australia, September 1897, *R.B. Leake* (*iso*: K, NSW, PERTH 01017489-fragment ex E).

Dense, rounded or obconic *shrubs* (0.2)0.5-1.2(1.7) m tall, few- to many-stemmed from ground level. *Bark* grey, smooth, sometimes fissured basally. *Branchlets* tomentulose with short, dense, crisped white hairs, sometimes reddish resin-hairs intermixed. *New shoots* with grey, ± matted pubescence and with many rust-coloured resin-hairs. *Stipules* persistent, subulate to triangular, 0.5-2.5 mm long, ± puberulous. *Phyllodes* terete, sub-terete or compressed to flat and linear, 25-50(60) mm long, 1-2 mm wide, rigid, inclined to ascending, straight, glabrous except tomentulose on pulvinus and base of phyllodes, sometimes sparingly appressed-puberulous but glabrescent, dark green; apex ending in a straight or slightly curved, sharply to coarsely pungent point; ± 16 nerves plane to slightly raised, closely parallel, sometimes irregularly verruculose, stomata raised; *gland* small, located on adaxial margin near the middle of blade, occasionally a second gland on upper 1/2 of blade. *Peduncles* 2 per axil, 0.5-1.5 mm long, crisped-tomentulose; *basal peduncular bract* caducous, cucullate, 1.5-3 mm long, villose; heads globular, 4-5 mm diam., (11)15-18(25)-flowered; bracteoles oblanceolate to obovate, arcuate, puberulous and ciliolate. *Flowers* 5-merous. *Sepals* less than half as long as petals, 1/2-3/4 united. *Petals* 1/2 united. *Pods* linear, raised over and slightly constricted between seeds, to 4.5 cm long and 2.5 mm wide, thin-crustaceous, slightly curved, sometimes slightly flexuose, tomentulose and with many red resin hairs. *Seeds* longitudinally arranged in pods, elliptic, *c.* 3 mm long, 2 mm wide, 1 mm thick, glossy black; *pleurogram* U-shaped; *areole* small; *aril* terminal, short-tubular with scalloped margin, 2 mm long, white.

Selected specimens examined. WESTERN AUSTRALIA: 30 km W of 90 mile Tank, Frank Hann National Park, *T.E.H. Aplin* and *M.E. Trudgen* 5918 (K, MO, NY, PERTH); about 0.5 miles [0.8 km] N of Bendering on road to Narembeen, *B.R. Maslin* 517 (MEL, PERTH); 18 miles [28.9 km] W of Pederah on road to Kulin, *B.R. Maslin* 532 (K, MEL, PERTH); 8 km due W of Merredin, *B.R. Maslin* 2352 (CANB, K, NY, PERTH); 10 km due SW of Chiddarcooping Hill, *B.R. Maslin* 6379 (CANB, K, PERTH); 15 km SSW of Queen Victoria Rocks, *c.* 60 km SSW of Coolgardie, *K. Newbey* 5681 (PERTH); 4.6 km E of Graham Rocks turn-off on Hyden-Newdegate road, *J.G.* and *M.H. Simmons* 1325 (PERTH); 97 miles [156 km] E of Southern Cross, *E. Wittwer* 1298 (PERTH).

Distribution. Southwest Western Australia from near Wyalkatchem and Chiddarcooping Nature Reserve (*c.* 80 km north-northeast of Merredin) south to Ongerup and Frank Hann National Park (which is located 30-110 km east-northeast of Lake King). A few collections have been made east of the main distribution in the Coolgardie area (near Coolgardie and Queen Victoria Rocks).

Habitat. In sand and loam, occasionally clay, mostly in open mallee shrubland.

Flowering and fruiting periods. Flowers from June-September; pods with mature seeds have been collected in December.

Affinities. *Acacia densiflora* differs from most of its relatives in its partly united sepals and petals; other characters useful in recognizing the species include its very short, tomentulose peduncles, densely tomentulose branchlets and many-nerved phyllodes with commonly straight, sharply pungent points.

Discussion. The gradual progression in phyllode shape within the species from completely terete (as in the type) through sub-terete to flat makes recognition of infraspecific taxa impractical, at least on this basis, even though the extremes look rather different. Several collections from east of the main distribution, i.e. around Coolgardie and in the Frank Hann National Park, have phyllodes with coarser-appearing nervature and often some of the nerves are tuberculate. In both respects, however, these populations intergrade with the typical ones.

Conservation status. Widespread, not known to be under threat.

2. Acacia dissona R.S. Cowan & Maslin, sp. nov.

Frutex 0.5-2 m altus, ramis ± contortis, ramulis appresso-puberulis. *Stipulae* persistentes, triangulares. *Phyllodia* sub-teretia vel teretia, gradatim contracta ad apicem plus minusve acuto-pungentia vel mucronata et non-pungentia, pulvino 0.5-2 mm longo, ad basem expanso, 2-4 cm longa, 1-1.5 mm lata, ratione horum 15-30, rigida, recta vel fere recta, glabra, nervis numerosis, elevatis, arcte parallelis, stomatibus elevatis, interdum tuberculiformibus. *Pedunculi* 2 in quoque axilla, 1-4 mm longi, glabri; *capitulis* globularibus, 5-6 mm diametro, 15-20-floribus; bracteolis linearibus. *Flores* pentameri; *sepalis* petalisque discretis, sepalis petalis circa dimidia brevioribus, linearibus ad lineari-spathulatis, apicaliter ciliolatis. *Legumina* linearia, supra semina elevata et inter semina plus minusve constricta, ad 60 mm longa et 2.5 mm lata, tenuiter crustacea ad tenuiter coriacea, leviter arcuata, plus minusve appresso-puberula. *Semina* longitudinalia, oblongo-elliptica, 2.5-4.5 mm longa, 1.5 mm lata, 1 mm in crassitie, nitida vel sub-nitida, brunnea, arillo seminibus 1/2-/3 breviore, conico vel obtuso et cristato, dilute luteo.

Typus: 14 km N of Lake Grace, Western Australia, 5 October 1975, *B.R. Maslin* 3843 (*holo*: PERTH 00194824; *iso*: CANB, G, K, MEL, NSW, NY).

Low-domed to narrowly obconic, dense *shrubs* 0.5-2 m tall, branches often ± contorted. *Bark* light grey, finely longitudinally fissured at base of trunk, smooth on branches. *Branchlets* more or less ridged, with very short, appressed, straight to shallowly-curved hairs. *Stipules* persistent, triangular. *Phyllodes* sub-terete or terete, 2-4 cm long, 1-1.5 mm wide, l:w = 15-30, rigid, inclined to erect, straight or nearly so, green, glabrous or pulvinus often puberulous adaxially; apex more or less sharply pungent or only mucronate to mucronulate; *nerves* numerous, closely parallel, raised, sometimes paler than inter-nerve spaces; stomata raised in inter-nerve spaces, sometimes appearing as tubercles; *pulvinus* 0.5-2 mm long, sometimes not well differentiated, usually expanded at base; *gland* small, near middle of blade on adaxial surface. *Peduncles* 2 in each axil, 2-4(5) mm long, glabrous; *heads* globular, golden, 5-6 mm diam. (fresh), 3-4 mm diam. (dry), 15-20-flowered; *bracteoles* linear. *Flowers* 5-merous. *Sepals c.* 1/2 as long as petals, free, linear, ciliolate apically. *Petals* free, elliptic, glabrous. *Pods* linear, raised over and variably constricted between seeds, to 6 cm long and 2.5 mm wide, thin-crustaceous or thin-coriaceous, moderately curved, somewhat loosely and irregularly reticulate-nerved, ± appressed-puberulous. *Seeds* longitudinally arranged in pods, oblong-elliptic, 2.5-4.5 mm long, 1.5 mm wide, 1 mm thick, dark-brown, glossy or semi-glossy; *aril* terminal, conical or broadly rounded and crested, 1/2-2/3 as long as seed, pale yellow.

Distribution. Discontinuous in southwest Western Australia in an area bounded by Coorow, Ongerup, Norseman and Southern Cross.

Affinities. In several respects the new species resembles *A. mackeyana* Ewart & Jean White (which is described below): the branchlets are appressed-puberulous, the pulvinus is expanded at its base, the

peduncles are glabrous and the perianth parts are free. *Acacia mackeyana*, however, has phyllodes which are commonly recurved and abruptly contracted at both the apex and pulvinus, as well as having 7-12-flowered heads and sub-terete, thick-walled, crustaceous pods.

There is considerable similarity also between *A. dissona*, particularly the typical variety, and *A. kalgoorliensis* R.S. Cowan & Maslin (see below) which has generally longer phyllodes with the apex drawn out into a long spinose tip, mostly shorter peduncles, pods with appressed, red resin-hairs and seeds with an aril that does not invest the seed apex.

Infraspecific taxa. The differences separating the two varieties comprising the species are mostly to be found in the pods and seeds. There are, however, qualitative differences in the degree of pungency of the phyllodes and the colour of the nerves.

Etymology. The name given refers to its discordant nature, in relation to its close relatives (from *dissonus*, Latin for discordant or different).

2a. Acacia dissona R.S. Cowan & Maslin var. **dissona.**

Phyllodes 2-4 cm long, sub-terete, contracted to short, more or less sharply pungent tips, nerves and inter-nerve spaces uniform in colour, stomata sometimes tuberculate. *Peduncles* 2-5 mm long. *Pods* distinctly constricted between the seeds, sparingly appressed-puberulous. *Seeds* 4.5 mm long; *aril* long-conical.

Selected specimens examined. WESTERN AUSTRALIA: 45 km E of Norseman, *T.E.H. Aplin* 1811 (PERTH); Muntadgin, *E.T. Bailey* 690 (PERTH); 21.6 km ENE of Merredin by road, *R. Coveny* 8340 and *B. Haberley* (PERTH); 5 km SE of Coorow, *A. Doley* 4 (PERTH); Rabbit Proof Fence, Wanarra, *C.A. Gardner* 13897 (PERTH); New Zealand Gully, Southern Cross, *S. Grayling* 1 (PERTH); 14 km N of Lake Grace towards Kulin, *B.R. Maslin* 4067 (PERTH); *c.* 4 km S of Karlgarin on Pederah Road, *B.R. Maslin* 6738 (PERTH); 9 km WSW of Lake Cairlocup, *K. Newbey* 4333 (PERTH); 4.1 km from Hyden on road to Dragon Rocks, *J.G.* and *M.H. Simmons* 1319 (PERTH); between Hyden and Kondinin, *D.J.E. Whibley* 3355 (PERTH).

Distribution. Discontinuous in southwest Western Australia in the Merredin-Southern Cross area south to near Ongerup with outliers in the Coorow-Wanarra area (*c.* 250 km northwest of Merredin) and in the Norseman area (*c.* 350 km northeast of Ongerup).

Habitat. Grows on clay, loam, and sandy soils in eucalypt woodland or mallee, sometimes dominated by *Eucalyptus salmonophloia.*

Flowering and fruiting periods. Most flowering specimens have been collected in September and October, but the northern ones (from the Coorow-Wanarra area) were collected in July and August. Pods with mature seeds have been collected in December.

Conservation status. Not considered rare or endangered.

2b. Acacia dissona var. **indoloria** R.S. Cowan & Maslin, var. nov.

A var. *dissona* phyllodiis teretibus mucronatis et innocuis ad grosse pungentibus, *leguminibus* inter semina non-constrictis vel solum leviter constrictis et sparse appresso-puberulis, *seminibus* 2.5-3.5 mm longis arillo lato-obtuso cristato differt.

Typus: 12 km E of Kulja towards Mollerin, Western Australia, 9 January 1979, *B.R. Maslin* 4448 (*holo*: PERTH 00153168; *iso*: CANB, K, NY).

Phyllodes terete, mucronate, innocuous to coarsely pungent, mature phyllodes with raised nerves commonly paler than inter-nerve spaces (less clear on juvenile phyllodes), pulvinus expanded at base, 0.5-2 mm long. *Pods* scarcely constricted between seeds, sparsely appressed-puberulous, at least between seeds. *Seeds* 2.5-3.5 mm long with a broadly obtuse, crested aril.

Selected specimens examined. WESTERN AUSTRALIA: Bruce Rock, October 1932, *E.T. Bailey* (PERTH 00195294); 3 miles [4.8 km] NW of Muntadgin, *J. Goodwin* 67 (PERTH); Caiguna to Southern Cross, *C. Herscovitch* CH10 (PERTH); 25 km ESE of Tadpole Lake, Frank Hann National Park, *K. Newbey* 5538 (PERTH); 6 miles [9.7 km] E of Ballidu, *R.D. Royce* 2103 (PERTH).

Distribution. Scattered in inland southwest Western Australia in the Ballidu-Mollerin area (*c.* 75-145 km east of Moora), Bruce Rock-Muntadgin area (Muntadgin is *c.* 45 km northeast of Bruce Rock) and the Frank Hann National Park (located 30-110 km east-northeast of Lake King).

Habitat. Grows on sand and loam mostly in open mallee shrubland.

Flowering and fruiting periods. Flowering occurs from August to September with most specimens collected in September. Pods with mature seeds have been collected in January.

Variation. Typically the pulvinus is terete in the upper part but flares basally; however, in one instance (the Newbey collection cited above) it is completely terete.

Conservation status. A Priority 3 taxon on the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The name for this taxon alludes to the non-pungent nature of the phyllodes (from *indolorius*, Latin for painless).

3. Acacia eremophila W. Fitzg., J. Bot. 50: 19 (1912)

Lectotype (*fide* Maslin &. Cowan 1994a): Cowcowing sandplain, Western Australia, August 1904, *M. Koch* 1024a (BM); *isolecto*: NSW, PERTH 00838292, 01505246 & 00763136). *Paralectotype*: Cowcowing, September 1904, *M Koch* 1024a (NSW, PERTH 00750980).

A. leptoneura Benth. var. *eremophila* W. Fitzg. ex Ewart & Jean White, Proc. Roy. Soc. Victoria n. ser. 23: 286, pl. 50, figs 1-4 (1911). *Typus*: Cowcowing, Western Australia, August 1904, *M. Koch* 1024a (*holo*: presumably MEL, *n.v., fide* Maslin & Cowan, *loc. cit.*).

Dense, rounded to obconic *shrubs* usually 0.4-2 m tall and about the same across. *Bark* grey, smooth. *Branchlets* terete, slightly ribbed, white- or grey- sub-appressed-tomentulose (often with dark resin-hairs intermixed), appressed-puberulous or crispate-sericeous. *Stipules* persistent, subulate-triangular, 0.4-0.8 mm long. *Phyllodes* terete, 2-11 cm long, 0.6-1.5 mm diam., rigid, patent to erect, straight, glabrous except tomentulose on pulvinus and phyllode base, green to greyish-green or yellowish green, sometimes ± viscid when young; *apex* commonly reflexed uncinate, rarely straight or sub-uncinate; *pulvinus* terete, 1-3 mm long; nerves mostly 9 or 10, closely parallel, depressed below raised inter-nerve spaces bearing raised stomata; *gland* small, mostly at or below middle of phyllode. *Peduncles* 2 per axil, 1-2 mm long, ± tomentulose, sometimes also with red resin-hairs; *basal peduncular bracts* caducous, cucullate, 1-2 mm long, glabrous or hairy, red resin-hairs present or absent; *heads* globular, light-golden, 3-4 mm diam., 10-25-flowered; *bracteoles* spathulate, ciliolate. *Flowers* 5-merous. *Sepals* more or less united to 1/2 their length but sometimes only basally, or some even free, narrowly oblong, ciliolate. *Petals* free, oblanceolate to obovate. *Pods* linear, raised over and somewhat constricted between seeds, 2-5 cm long, 1.5-3 mm wide, thinly crustaceous, straight or undulate, tomentulose, appressed-puberulous or glabrous, marginal nerve distinct. *Seeds* longitudinally arranged in pods, elliptic to oblong-ovate, 2.5-3 mm long, 1.5- 2 mm wide, dark brown; *aril* white, terminal, to 2/3 length of seed.

Distribution. Widely distributed throughout southern inland Western Australia.

Notes. When Ewart & Jean White published *A. leptoneura* Benth. var. *eremophila*, they cited *A. eremophila* W.V. Fitzg. as being in manuscript; at the varietal rank we would cite Ewart & Jean White as the publishing authors but the first available name at the specific rank is Fitzgerald's name.

As is often the case with Max Koch collections, there is some confusion because the numbers he attached to collections were taxon numbers, not collection numbers. Although the protologue lists *Koch* 1024 and 1024a as the basis for *A. eremophila*, this is clearly an error; Koch's own notes in archives of the Western Australian Herbarium lists a *Grevillea* species for 1024 and *A. eremophila* for 1024a. Further discussion may be found in the paper on Fitzgerald types by Maslin & R.S. Cowan (1994a).

Affinities. Related to *A. densiflora* Morrison (see above) which has *c.* 16-nerved phyllodes and 1/2- to 3/4-united perianth parts. *Acacia eremophila* occurs as two varieties, separated on pod shape and hairiness as well as phyllode length, peduncle pubescence and number of flowers per head.

Variation. This species is reasonably constant morphologically, although there is a variant, not encompassed by the above description, which differs from typical *A. eremophila* in having phyllodes with more numerous nerves and consequently narrower inter-nerve spaces. This "numerous-nerved variant" has a sporadic distribution and has been recorded from Edjudina Station (*c.* 130 km northeast of Kalgoorlie) (*M. Blackwell* 47 - PERTH), the Great Victoria Desert between Neale Junction and Plumridge Lakes (*B.R. Maslin* 5701 - K, MO, NSW, PERTH) and from between Norseman and Balladonia (*K. Newbey* 7429 - PERTH). It was treated as *A. rigens* Cunn. ex Don by Maslin (1981) in the "Flora of Central Australia" and specimens were distributed as such.

3a. Acacia eremophila W. Fitzg. var. **eremophila**

Shrubs 0.4-2 m tall. *Phyllodes* (20)27-45(60) mm long, 0.6-1 mm diam., the tip reflexed or rarely straight. *Peduncles* 1-2 mm long, glabrous to sparsely puberulous, red resin-hairs present or absent,

rarely densely tomentulose; *heads* less than 20-flowered. *Pods* 2-6 cm long, 1.5-2 mm wide, straight, glabrous or with minute red resin hairs. *Seeds* elliptic.

Selected specimens examined. WESTERN AUSTRALIA: Cundeelee, *P. Boswell* A28 (PERTH); 7 miles [11.2 km] N of Cadoux towards Kalannie, *R. Cumming* 1869 (PERTH); Peak Charles area, 10 September 1972, *T. Daniell s.n.* (PERTH 00666661); Bendering, September 1923, *C.A. Gardner s.n.* (PERTH 00667161, 00665614 & 00667153); 1.7 miles [2.7 km] N of Kalgoorlie, 1 September 1954, *A.R. Main s.n.* (PERTH 00702668); 1 mile [1.6 km] W of Rabbit Proof Fence No. 1 on Norseman-Hyden road, *B.R. Maslin* 554 (NSW, PERTH); about 16 km due NW of Bruce Rock, *B.R. Maslin* 2371 (PERTH); 29 km N of Kondinin towards Narembeen, *B.R. Maslin* 3423 (CANB, K, PERTH); 3.5 km S of Wubin on road to Dalwallinu, *B.R. Maslin* 4974 (CANB, K, PERTH); 23 km N of Pioneer Tank, *c.* 80 km S of Zanthus, *K. Newbey* 7168 (MEL, PERTH); near Lake Dundas, *I.V. Newman* 771 (PERTH); Wongan Hills, 9 August 1949, *E. Salisbury s.n.* (PERTH 00665622); railway crossing, S of Dundas Rocks on Highway 1, *M.H. Simmons* 297 (PERTH); 33 km W of Balladonia on Eyre Highway, *M.H. Simmons* 1160 (PERTH); 2 km SW of Manmanning, 14 Aug.1978, *B.* and *M. Smith s.n.* (PERTH 00665649); 5 km W of Kitchener, *J. Taylor* 545, *M.D. Crisp* and *R. Jackson* (NSW, PERTH).

Distribution. Southern Western Australia, scattered over a wide area bounded by Wubin (*c.* 20 km north of Dalwallinu), Menzies (*c.* 125 km north-northwest of Kalgoorlie), Kitchener (*c.* 160 km north-northeast of Balladonia), Balladonia and Kondinin.

Habitat. Commonly in loam or sand in low eucalypt woodland and mallee or mixed scrubland.

Flowering and fruiting periods. Flowers in July-September; pods with mature seeds have been collected in December.

Variation. In the Peak Charles (*c.* 100 km southwest of Norseman) to Dundas (*c.* 22 km south of Norseman) area, there are populations with all the characteristics of this variety except that the phyllode tip is straight instead of reflexed as is typical. The Gardner collection from Bendering is unusual in having densely tomentulose peduncles.

Affinities. In addition to its close relationship with var. *variabilis*, the typical variety is superficially similar to *A. papulosa* R.S. Cowan & Maslin which has glabrous, papulose branchlets, smaller heads, longer, glabrous peduncles, linear to fusiform bracteoles, resinous pods and oblong seeds.

Conservation status. Widespread, not under threat.

3b. Acacia eremophila var. **variabilis** Maiden & Blakely, J. & Proc. Roy. Soc. Western Australia 13: 6, pl. 4, figs 12-20 (1928).

Lectotype (here selected): Comet Vale, Western Australia, October 1916, *J.T. Jutson* 84 (NSW 216944); *isolecto*: K, MEL (p.p.). *Paralectotype*: (1) Comet Vale, Western Australia, December 1916, *J.T. Jutson* 91 (NSW, PERTH 01017535-fragment ex NSW); (2) Comet Vale, 22 October 1916, *J.T. Jutson* 203 (NSW); (3) Comet Vale, 11 November 1916, *J.T. Jutson* 208 (NSW, PERTH 00751057); (4) Comet Vale, 27 November 1916, *J.T. Jutson* 208A (K, NSW, PERTH 01017950-fragment ex NSW).

Shrubs 1-1.6 m tall. *Phyllodes* 5-11 cm long, 1-1.5 mm diam. *Peduncles* 2 mm long, sparsely to densely tomentulose or appressed-puberulous, resin hairs rarely present; *heads* 20-25-flowered. *Pods* to 5 cm long, 1.5-3 mm wide, distinctly constricted between seeds, loosely undulate, tomentulose or appressed-puberulous. *Seeds* oblong-ovate.

Other specimens examined. WESTERN AUSTRALIA: 94 miles [151 km] E of Norseman on Eyre Highway, *I. Armitage* 562 (PERTH); between Balladonia and Norseman, 20.3 km E of turnoff to Newman Rocks, *R.J. Chinnock* 3002 (PERTH); 20 miles [32 km] S of Menzies, 1975, *N. Pratt s.n.* (PERTH 00700541); 34.4 km W of Balladonia on Eyre Highway, *M.H. Simmons* 1162 (PERTH); 5 km E of Zanthus, *P.G. Wilson* 7623 (PERTH).

Distribution: This poorly collected variety of southern Western Australia is known from only three widely separated localities, near Balladonia, near Zanthus (*c.* 160 km north of Balladonia) and Comet Vale (*c.* 85 km north-northwest of Kalgoorlie).

Habitat. Probably grows in sand or sandy loam in low woodland or scrub.

Flowering and fruiting periods. Flowers in September; pods with mature seeds have been collected in December. Additional fruiting collections are needed to confirm the separation of this variety from the typical one.

Typification. Choice of a lectotype is made because several collections were cited in the protologue, some in flower, others in fruit, even though all apparently represent the same taxon.

Variation. One specimen of this variety (*Pratt s.n.* from south of Menzies - PERTH) records a maximum height of 3-4.5 m for the taxon, which is considerably larger than is typical.

Conservation status. A Priority 3 taxon in the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

4. Acacia hadrophylla R.S. Cowan & Maslin, sp. nov.

Frutex (20)30-50(70) cm altus, ramulis tomentulosis et cum micro-piliis nigris, interdum plus minusve sericeis. *Stipulae* persistentes, anguste triangulares, 0.5-0.8 mm longae. *Phyllodia* plana, oblongo-elliptica, obtusa vel subobtusa et cum parvo mucro, pulvino 0.8-1.5 mm longo, a lamina abrupte separato, valde crassa, rigida, (5)7-25 mm longa, 2.5-5.5 mm lata, patentia ad inclinata, saepe leviter incurvata, glabra praeter pulvinum tomentulosum, uniglandulosa, in quoque superficie 5-7 nervata, nervis valde elevatis, distantibus. *Pedunculi* binati, glabri, 0.5-2 mm longi, pedunculorum bracteis basalibus cucullatis, rostratis, 2.5-4 mm longis; capitula 3-3.5 mm diametro in sicco, 14-25-floribus, *flores* 5-meri, *sepalis* discretis vel partim connatis, *petalis* plus minusve discretis. *Legumina* linearia, inter semina plus minusve constricta, 12-22 mm longa, 2 mm lata, puberula, plus minusve curvata. *Semina* longitudinalia, oblongo-elliptica, 2.5-3 mm longa, 1-2 mm lata, brunneo-nigra, arillo terminali.

Typus: between Bremer Range and Lake King-Kumarl Road, Western Australia, 23 September 1983, *B.R. Maslin* 5430 (*holo*: PERTH 00194913; *iso*: CANB, K, MEL, NSW, NY).

Dense to moderately open, domed to obconic *shrubs* (20)30-50(70) cm tall, spreading 40-150(270) cm across. *Branchlets* tomentulose, sometimes more or less sericeous, and with many black micro-hairlets. *Stipules* persistent, narrowly triangular, 0.5-0.8 mm long. *Phyllodes* oblong-elliptic, (5)7-25 mm long, 2.5-5.5 mm wide, rigid, thick, patent to inclined, often shallowly incurved, glabrous except for the tomentulose pulvinus and phyllode-base, green; apex obtuse or sub-obtuse with small mucro; pulvinus 0.8-1.5 mm long, abruptly separated from blade; nerves 5-7 on each face, strongly raised, distant; stomata slightly raised. *Peduncles* 2 per axil, 0.5-2 mm long, glabrous; basal peduncular bract cucullate, rostrate, 2.5-4 mm long, puberulous on rostrum; heads globular, light- to mid-golden, 5 mm diam. (fresh), 3-3.5 mm diam. (dry), 14-25-flowered; bracteoles linear to spathulate, ciliolate. *Flowers* 5-merous. *Sepals* 1/2 length of petals, free, narrowly oblong, ciliolate. *Petals* free or some shortly connate basally. *Pods* linear, somewhat constricted between seeds, 12-22 mm long, 2 mm wide, puberulous with red, glandular(?) papillae, crustaceous, somewhat curved, the marginal nerve distinct, lighter coloured. *Seeds longitudinal*, oblong-elliptic, 2.5-3 mm long, 1-2 mm wide, brown-black, the aril terminal.

Selected specimens examined. WESTERN AUSTRALIA: adjacent to NE part of Nature Reserve A24435, Lake King townsite, *K.J. Atkins* 1540 (PERTH); 33 km SSW of Peak Charles, *M.A. Burgman* 1484 and *S. McNee* (PERTH); Circle Valley, *H. Knox* 2907831 (PERTH); One Mile Rock Reserve, *B.R. Maslin* 4484 (CANB, PERTH); 13 km SW of Mount Day, *K. Newbey* 5296 (BM, PERTH); 4 km NE of Peak Charles, Peak Charles National Park, *K. Newbey* 5407 (MO, PERTH); 22 km WNW of Roberts Swamp, *c.* 53 km W of Grass Patch, *K. Newbey* 8141 (PERTH).

Distribution. Scattered but locally frequent in small populations from Mount Holland (*c.* 85 km northeast of Hyden) and Lake King east to Kumarl and Scaddan (which are located between Norseman and Esperance), southwest Western Australia.

Habitat. Growing in loam, clay-loam or sand in open shrubland with *Eucalyptus transcontinentalis, E. calycogona* or *E. flocktoniae.*

Flowering and fruiting periods. Flowers from June to September; pods with mature seeds collected in December.

Affinities. The tomentulose branchlets, cucullate basal peduncular bracts, short peduncled heads and pentamerous flowers indicate the placement of the species within the "*A. densiflora* Group". The new species differs from most other members of the group in its short, flat, thick, oblong-elliptic phyllodes. *Acacia densiflora* has an element with flat phyllodes but in that instance the phyllodes are linear. *Acacia hadrophylla* shares a number of characteristics with *A. undosa* which also has flat phyllodes but they are generally longer, much thinner, linear to linear-oblanceolate, commonly with 2 glands and *A. undosa* has undulate pods.

Conservation status. Not considered rare or endangered.

Etymology. The specific epithet is formed from two latinized Greek words, *hadros*, defined as thick, bulky or stout, and *phyllon*, a leaf, referring to the thick phyllodes that characterize the species.

5. Acacia kalgoorliensis R.S. Cowan & Maslin, sp. nov.

Frutex densus rotundatus multicaulis 0.5-2.5 m altus, ramulis pilis albis sub-appressis et rubris resinosisve. *Phyllodia* teretia, acute pungentia, ad apicem longum durum fuscatum rectum vel raro

curvatum attenuata, pulvino 2-3 mm longo, crispato-sericeo, laminis 3-7 cm longis, plus minusve 1.5 mm diametro, rigidis, erectis, rectis, glabris, 20-nervatis, nervis indistinctis, stomatibus plus minusve elevatis, glande saepe 2. *Pedunculi* 2 in quoque axilla, 0.5-1.5(5) mm longi, glabri vel resinoso-pilis dispersis rubris ornatis; capitula globularia ad late ellipsoidea, 3-3.5 mm diametro, 15-22-floribus, bracteolis linearibus ad spathulatis, tomentulosis et ciliolatis. *Flores* 5-meri. *Sepala* longitudine 1/2 petali partes aequantia, discreta, villosulosa. *Petala* discreta. *Ovarium* papilloso-puberulum. *Legumina* linearia, supra semina elevata et inter semina constricta, ad 7.5 cm longa, 3 mm lata, chartacea, leviter curvata, appresso-puberula, pilis minutis, resinosis. *Semina* longitudinalia, anguste elliptica ad oblongo-elliptica, 4-4.5 mm longa, 1.8 mm lata, 1 mm crassitie, hebetato-nigra, arillo terminali.

Typus: 4 miles [6 km] N of Broad Arrow toward Menzies, Western Australia, 10 August 1971, *B.R. Maslin* 1910 (*holo*: PERTH 00194905; *iso*: CANB, K, NSW, NY).

Dense, rounded *shrubs* 1-3 m tall, many-stemmed from ground level, the main stems slightly twisted. *Bark* grey. *Branchlets* sub-appressed-puberulous, the hairs white, curved antrorsely or somewhat twisted and with red resin-hairs intermixed. *Phyllodes* terete, 3-7 cm long, *c.* 1.5 mm diam., rigid, erect, straight, green, glabrous except for the crispate-sericeous pulvinus; apex tapering into long, hard, dark, straight or rarely curved tip, sharply pungent; pulvinus 2-3 mm long; ± 20 nerves slightly raised, closely parallel; stomata somewhat raised; glands usually 2, one near middle, the other near the phyllode apex. *Peduncles* 2 per axil, 0.5-1.5 mm, rarely to 5 mm long, glabrous or with scattered red resin-hairlets; basal peduncular bract cucullate, rostrate, 2.5-3 mm long, appressed-puberulous; heads globular to widely ellipsoid, golden, 3-3.5 mm diam., 15-22-flowered; bracteoles linear to spathulate, tomentulose and ciliolate. *Flowers* 5-merous. *Sepals* 1/2 length of petals, free, linear to spathulate, villose. *Petals* free. *Pods* linear, raised over and constricted between seeds, to 7.5 cm long, 3 mm wide, chartaceous, shallowly curved, appressed-puberulous with minute, red-brown resin hairs. *Seeds* longitudinally arranged in pods, narrowly elliptic to oblong-elliptic, 4-4.5 mm long, 1.8 mm wide, 1 mm thick, dull, black; pleurogram U-shaped; areole raised, shiny; aril terminal.

Selected specimens examined. WESTERN AUSTRALIA: Hampton Hill Station, 23 km E of Kalgoorlie, *R. Coveny* 8426 and *B. Haberley* (NSW, PERTH); near Kanowna, *C.A. Gardner* 783 (PERTH); 22.4 km E of Kalgoorlie along road to Zanthus, January 1991, *M. McDonald* 1338 (PERTH); 8 miles [12.8 km] SW of Kalgoorlie towards Coolgardie, *B.R. Maslin* 1897 (MEL, MO, PERTH); about 16 km NNE of Kalgoorlie on road to Edjudina Station, *B.R. Maslin* 4847 (PERTH); 28.5 km SSE of Marvel Loch on track towards Mount Day, *B.R. Maslin* 5514 (PERTH).

Distribution. Restricted to near Kalgoorlie (with collections within a 50 km radius of Kalgoorlie) and the Marvel Loch area (*c.* 200 km west-southwest of Kalgoorlie), with a variant scattered *c.* 320-560 km NW of Kalgoorlie (near Wubin and Noongal and Yuinmery Stns), W.A.

Habitat. Rocky loam and clay on slopes of low hills in eucalypt woodland. The variant grows in sandy loam and loam over calcrete in eucalypt open woodland and *Acacia* open scrub.

Flowering and fruiting periods. Flowers from August to October; pods with mature seeds have been collected in January.

Variants. Four collections are clearly related to *A. kalgoorliensis* but may represent a distinct species. These collections differ by having widely ellipsoid, 30-40-flowered heads on peduncles 2-4 mm long:

Noongal Station, *P. Curry* 1073 (CANB, PERTH); *c.* 40 km NE of Wubin, *B.R. Maslin* 5586 (MEL, MO, NSW, PERTH); and 7.5 km E of Yuinmery Homestead, *J. Dell* JD95 and JD124B (PERTH). All three localities are widely separated (*c.* 560 km, 480 km and 320 km to the northwest, respectively) from Kalgoorlie.

One collection (*Bale* 109, Mount Hunt, Boulder, W.A. - PERTH) has peduncles 4-5 mm long but otherwise is typical of the species.

Affinities. The nearest affinity of this species is with *A. densiflora* Morrison (see above) which has united perianth parts and uniglandular phyllodes with the apex pungent but not drawn out into a protracted spinose tip as in *A. kalgoorliensis*. The red micro-hairlets intermixed with the appressed white or grey hairs on the branchlets and young phyllodes of *A. kalgoorliensis* also serve to distinguish it. In the Kalgoorlie area, another similar-appearing species occurs, *A. inceana* Domin, but its phyllodes appear almost nerveless and its flowers are tetramerous (see discussion below under "*A. enervia* Group"). Although not closely related, *A. donaldsonii* R.S. Cowan & Maslin (ms name, in prep.) is superficially similar but it has larger phyllodes (6-14.5 cm x 1.5-2.5 mm) with four to eight, immersed or slightly raised nerves, larger heads, united sepals and larger compressed-moniliform pods.

Conservation status. A Priority 3 taxon on the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The name of the species is derived from the Western Australian goldfields town, Kalgoorlie, where the species is centred.

6. Acacia mackeyana Ewart & Jean White, Proc. Roy. Soc. Victoria n. ser. 22(1): 6, pl. 3, 4 (1909)

Lectotype (here selected): Cowcowing, Western Australia, August 1904, *M. Koch* 1013, flowering (MEL 117106; *isolecto*: BRI, K, NSW, P, PERTH 02482622 and 02482614). *Paralectotype*: Cowcowing, Western Australia, August 1904, *M. Koch* 1013, fruiting (K, MEL, PERTH 00764213, 00764221 and 00764205).

A. leptoneura var. *mackeyana* (Ewart & Jean White) Blackall & Grieve, How to Know W. Australian Wildfl., Part 1: 197 (1954), *nomen nudum.*

Dense, domed or obconic, single- or multi-stemmed *shrubs* (0.3)0.5-1.7(2.3) m tall; with age the plants can develop a "bonsai" habit with spreading and twisted trunks and a dense, flat-topped crown. *Bark* grey to branchlet tips, smooth except fissured at base of main stems. *Branchlets* tomentulose to appressed-tomentulose with red resin-hairs intermixed. New growth bronzish-coloured due to resin-hairs. *Stipules* persistent, triangular, less than 1 mm long, black, commonly with thick, more or less bulbous base. *Phyllodes* terete, (7)10-25(30) mm long, 1-1.5 mm wide, rigid, ascending to erect, commonly somewhat recurved, sometimes straight, glabrous except for the ± tomentulose adaxial surface of pulvinus, dark green; apex abruptly short- to long-mucronate, sharply pungent; pulvinus abruptly separated and commonly flared basally, 1-1.5 mm long; 20 nerves closely parallel and sometimes tuberculate; stomata between nerves raised; gland single, mostly at or above middle of phyllode. *Peduncles* 2 per axil, 2-5 mm long, glabrous; basal peduncular bract cucullate, rostrate, 2-4 mm long, tomentulose and ciliolate; heads globular, prolific and showy, golden, 5-6 mm diam. (fresh), 3-4 mm diam. (dry), 7-12-flowered; bracteoles linear, ciliolate. *Flowers* 5-merous. *Sepals*

to 1/2 as long as petals, free, linear, ciliolate. *Petals* free, elliptic, glabrous. *Pods* sub-terete, oblong-linear, 15-35 mm long, 2-2.5 mm wide, straight or slightly curved, thick-crustaceous, glabrous, longitudinally nerved. *Seed* longitudinal, narrowly oblong, 3-4 mm long, 1-2 mm wide, dull, dark brown to black, the aril terminal with scalloped margin.

Selected specimens examined. WESTERN AUSTRALIA: 5.5 km E of Tammin, *R. Coveny* 8311 and *B. Haberley* (PERTH); 2.5 miles [4 km] N of Cadoux towards Kalannie, *R. Cumming* 1868 (PERTH); 11 miles [17.6 km] N of Wyalkatchem towards Koorda, *B.R. Maslin* 155 (PERTH); 7 miles [11.2 km] W of Moorine Rock on Great Eastern Highway, *B.R. Maslin* 583a (NSW, PERTH); 5.5 km NW of Wongan Hills towards Piawaning, *B.R. Maslin* 4203 (PERTH); 29 km NW of Kulin towards Corrigin, *B.R. Maslin* 4372 (PERTH); near Snake Soak, *c.* 11 km due SW of Wialki, *B.R. Maslin* 4464 (PERTH); 1 km E of 90 Mile Tank, 32° 39'S, 120° 41'E, *B.R. Maslin* 5789 (MEXU, PERTH); Chiddarcooping Nature Reserve, *B.R. Maslin* 6380 (CANB, MEL, NSW, PERTH, Z); Davies property, 10 km due N of Coorow, *B.R. Maslin* 6577 (PERTH); Nugadong Reserve 12614, 21 km SE of Wubin, *B.G. Muir* 206 (1.5) (PERTH); 3 miles [4.8 km] E of Billericay, *K. Newbey* 3237 (CANB, K, MEL); 35 km from Ravensthorpe towards Lake King, *R. Perry* 674 (PERTH); Cemetery Road, Yorkrakine, *M.H. Simmons* 1274 (PERTH); Mullewa, 3 July 1952, *N.H. Speck* (PERTH 00884677); 20 km NE of Ongerup, *N. Stevens* KRN9520-1 (MELU, PERTH); 5.9 km SE of Bruce Rock on main road to Narembeen, *M.D. Tindale* 3736 (CANB, K, MEL, NSW, PERTH, US).

Distribution. Widely distributed in southwest Western Australia from near Coorow southeast to near Corrigin and Moorine Rock (which is *c.* 30 km west-southwest of Southern Cross on Great Eastern Highway), with a north-western outlier at Mullewa and south-eastern outliers in the Ongerup, Ravensthorpe and Frank Hann National Park areas (*c.* 200 km southeast of the Corrigin-Moorine Rock area).

Habitat. Gravelly soil, loam, loamy clay and sometimes sand in eucalypt woodland and mallee communities and also in *Melaleuca uncinata* thickets.

Flowering and fruiting periods. Flowers from June to August; pods with mature seeds have been collected in December and January.

Typification. In the protologue of *A. mackeyana* Ewart & Jean White cite only one collection, *M. Koch* 1013, even though both flowers and fruits were described. As was noted under *A. eremophila* above, Koch regularly followed the practice of assigning taxon numbers to his collections and consequently the same number appears on quite different collections; in this instance, although both collections are from the same locality and certainly the same taxon, it is desirable to fix the application of the name. Consequently, we have selected the flowering specimen on MEL sheet #117106 as lectotype.

Affinities. *Acacia mackeyana* is related to *A. densiflora* which has partly united petals and sepals, ± tomentulose peduncles and straight, generally longer, terete to flat phyllodes. Also related to *A. dissona* which has straight phyllodes, 15-20-flowered heads and linear, thinly crustaceous or coriaceous pods.

Discussion. Although the authors of the protologue described the petals as 3/4 united, we have not seen this condition in any of the specimens, including the type collection.

Conservation status. Widely distributed, not under threat.

7. Acacia papulosa R.S. Cowan & Maslin, sp. nov.

Frutices 0.25-2 m alti, ramulis gracilibus glabris papulosis. *Stipulae* persistentes angusto-triangulares minutae glabrae. *Phyllodia* teretia, profunde et longitudinalia 8-sulcata, acuta apiculataque, subpungentia, pulvino cylindrico, saepe abrupte separato 1-1.5 mm longo, laminis 2-6 cm longis, 0.7-1 mm diametro, ascendentibus ad erectis, leviter incurvatis, glabris, inter nervos valde elevatis papulosisque, 8 vel 9 nervis principalibus longitudinalibus profunde impressis; glande parve indistincta. *Pedunculi* 3.5-5 mm longi binati glabri, capitula globularia vel oblongoidea 2.5-3.5 mm longa, 2.5-3 mm diametro, 10-20-floribus; bracteolis linearibus ad fusiformibus, leviter puberulis. *Flores* 5-meri. *Sepala* petalis dimidia breviora, ad 1/2-connata. *Petala* oblanceolata, acuta, discreta, glabra. *Legumina* linearia, inter semina leviter constricta circa 4 cm longa et 2.5 mm lata, erecta, leviter curvata glabra resinosa. *Semina* longitudinalia oblonga 3-4 mm longa, 1.5-1.8 mm lata nitida brunneo-nigra, pleurogramma seminibus dimida breviora, arillo terminali, truncato-conico.

Typus: gorge of the Fitzgerald River, Western Australia, 23 September 1948, *C.A. Gardner* 9230 (*holo*: PERTH; *iso*: CANB, K, PERTH).

Bushy, dense *shrubs* 0.25-2 m tall with slender, glabrous, papulose branchlets. *Stipules* persistent, narrowly triangular, minute, glabrous. *Phyllodes* terete, deeply 8-sulcate, 2-6 cm long, 0.7-1 mm diam., coriaceous, ascending to erect, slightly incurved, glabrous, papulose on strongly raised inter-nerve intervals, drying dark-coloured; apex acute and apiculate, subpungent; pulvinus cylindric, 1-1.5 mm long; nerves 8 or 9, deeply impressed; gland indistinct, small, 3.5-11.5 mm from base of blade. *Peduncles* 2 per node, 3.5-5 mm long, glabrous; basal peduncular bracts caducous after anthesis, widely elliptic or ovate, more or less rostrate, glabrous, cucullate; heads globular or oblongoid, 2.5-3.5 mm long, 2.5-3 mm diam., 10-20-flowered; bracteoles linear to fusiform, acute, slightly puberulous. *Flowers* 5-merous. *Sepals* 1/2 as long as petals, to 1/2-united, oblong, obtuse, minutely puberulous. *Petals* oblanceolate, acute, free, glabrous. *Ovary* papillate-puberulous. *Pods* linear, raised over and slightly constricted between seeds on one margin, *c.* 4 cm long and 2.5 mm wide, erect, thin-coriaceous, slightly curved, glabrous, resinous, dark-brown with strong marginal nerves. *Seeds* longitudinally arranged in pods, oblong, 3-4 mm long, 1.5-1.8 mm wide, 1-1.3 mm thick, glossy, dark brown-black; pleurogram U-shaped; areole *c.* 1/2 as long as seed; aril terminal, conical with truncate tip, 1/3-1/2 length of seed, white.

Other specimens examined. WESTERN AUSTRALIA: Fitzgerald River, *C.A. Gardner* 9239 (MEL, PERTH); 6 km NW of Boxwood Hill, *K. Newbey* 4291 (PERTH); 6 km N of Boxwood Hill, *K. Newbey* 4621 (CANB, PERTH).

Distribution. Known from only two localities, one in the Fitzgerald River National Park, the other near Boxwood Hill, southwest Western Australia.

Habitat. Eucalyptus occidentalis woodland on spongolitic loam.

Flowering and fruiting periods. Flowers August through September; mature fruits with seeds collected late November to early December.

Affinities. Acacia papulosa is very similar superficially to the typical variety of *A. eremophila* in its deeply sulcate phyllodes with the inter-nerve spaces strongly raised and papulose by strongly raised stomata. *Acacia eremophila*, however, has pubescent branchlets, straight, more or less uncinate-

tipped phyllodes, heads 3-4 mm in diameter, spathulate bracteoles, shorter, hairy peduncles, non-resinous pods, elliptic to oblong-ovate seeds and it grows in loam or sand.

Discussion. C.A. Gardner's two collections of the species, as nearly as we can decipher his notes in his fieldbook (in the PERTH library archives), were made along the Fitzgerald River from the crossing of Colletts Road north about 6.5 km. That there have only been two collections in the Fitzgerald River National Park is surprising in view of relatively thorough collecting in the area over the past decade, especially by K. Newbey who made two collections from a second population near Boxwood Hill.

Conservation status. A Priority 2 taxon on the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The specific epithet is based on the conspicuous papulose surface of the branchlets and the inter-nerve spaces on the phyllodes (from *papulosus*, Latin for pustulate or pimply).

8. Acacia undosa R.S. Cowan & Maslin, sp. nov.

Frutex densus tholiformis vel obconicus 0.3-1.5 m altus, ramulis tomentulosis et cum micro-piliis nigris. *Stipulae* persistentes, subulatae ad subulato-triangulares, 0.6-2 mm longae. *Phyllodia* linearia ad lineari-oblanceolata, 20-45 mm longa, 1-4 mm lata, oblique mucronata, innocua ad grosse pungentia, raro acute pungentia, rigida, patentia, recta ad leviter incurvata, glabra, saepe 2-glandulosa, nervis omnino circa 20, arcte parallelis, stomatibus valde elevatis. *Pedunculi* binati, 1-1.5 mm longi, glabri; pedunculorum bracteae basales ovatae, cucullatae, rostratae, 1.5-3.5 mm longae, villosae et ciliolatae; capitula globularia, 3-3.5 mm diametro, 18-20-floribus. *Flores* pentameri; sepala discreta vel 1/2-connata. *Legumina* linearia, valde undulata, 10-40 mm longa, 2.5 mm lata, papillata. *Semina* longitudinalia, elliptico-oblonga ad late oblongo-elliptica, 2.2-2.7 mm longa, 1.2-1.8 mm lata, atro-brunnea.

Typus: 0.5 km S of Belka Siding (between Bruce Rock and Merredin), Western Australia, 14 December 1971, *B.R. Maslin* 2361 (*holo*: PERTH 00191450; *iso*: CANB, K, NSW).

Dense, domed or obconic *shrubs* 0.3-1.5 m tall and spreading to about the same across. *Branchlets* tomentulose, the very short hairs curved to crisped and with black micro-hairlets intermixed. *Stipules* persistent, subulate to subulate-triangular, 0.6-2 mm long. *Phyllodes* linear to linear-oblanceolate, 20-45 mm long, 1-4 mm wide, rigid, spreading, straight to shallowly incurved, dull green, glabrous except for tomentulose pulvinus; apex obliquely mucronate to sub-uncinate with a hard, innocuous to coarsely pungent point, rarely with a straight, sharply pungent point; pulvinus 1-2 mm long; nerves *c.* 9 per face, 20 in all, closely parallel with very occasional anastomoses, plane or slightly impressed, the inter-nerve spaces with strongly raised stomata; glands not prominent, 1 or 2, one at or near middle of phyllodes and the other on upper half of phyllode. *Peduncles* 2 per axil, 1-1.5 mm long, glabrous; basal peduncular bract ovate, cucullate, rostrate, 1.5-3.5 mm long, villose and ciliolate; heads globular, showy, golden, 3-3.5 mm diam., 18-20-flowered; bracteoles oblanceolate to linear-oblanceolate, ciliolate. *Flowers* 5-merous. *Sepals* linear to oblong, free or to half-united, puberulous at apex. *Pods* linear, strongly undulate, 10-40 mm long, 2.5 mm wide, papillate, the marginal nerve distinct, much lighter in colour. Seeds longitudinally arranged in pods, elliptic-oblong to broadly oblong-elliptic, 2.2-2.7 mm long, 1.2-1.8 mm wide, dark brown, the aril terminal.

Selected specimens examined. WESTERN AUSTRALIA: Survey Camp N of Warralackin, *J.S. Beard* 4735 (PERTH); *c.* 0.25 miles [0.4 km] S of Belka Siding (between Merredin and Bruce Rock), *B.R. Maslin* 1768 (AD, BRI, MO, PERTH); 1.5 km S of Tammin, *B.R. Maslin* 2314 (PERTH); 21 km E of Lake Grace, *B.R. Maslin* 6353 (PERTH, Z); 36 km E of Lake King, *K. Newbey* 9476-1 (MEL, MELU, PERTH); 45 km E of Pingrup (Lake Magenta Nature Reserve), *K. Newbey* 11734 (PERTH); 20 miles [32 km] W of Newdegate, *S. Paust* 842 (PERTH); 35 km S of Hyden towards Newdegate (at Pingaring-Mount Varley road intersection), *R. Perry* 545 (PERTH).

Distribution. Known only from scattered localities from near Tammin and Bruce Rock south to Lake Grace and southeast to near Lake King (which is *c.* 115 km east of Lake Grace), southwest Western Australia.

Habitat. Commonly in patches of open mallee shrubland in well-drained clayey sand or in moist brown loam.

Flowering and fruiting periods. Flowers in August-September; pods with mature seeds have been collected in December.

Variation. Several collections from near Tammin to *c.* 110 km northeast at Warralakin (e.g., *K. Newbey* 1948 - PERTH) have half-united sepals but otherwise are referrable to this species.

Affinities. The new species is similar in several characteristics to *A. hadrophylla* R.S. Cowan & Maslin (see above under *A. hadrophylla* for discussion). Specimens with very narrow phyllodes sometimes resemble the flat-phyllode variants of *A. densiflora* but that species has tomentulose peduncles and non-undulate pods.

Conservation status. A Priority 3 taxon in the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The specific epithet refers to the undulate pods, from *undosus*, Latin for billowy or with many waves.

The "*Acacia ancistrophylla* Group"

Members of this "Group" can be distinguished by a combination of characters. The phyllodes are straight to sigmoidally curved and linear to linear-oblanceolate with numerous, closely parallel, immersed to strongly discrete, non-anastomosing nerves, with one basal or sub-basal gland; new growth is sometimes densely beset with minute red-brown resin-hairs. The flowers are 5-merous with the sepals free to half-united. Pods are linear or narrowly oblong and straight to curved or coiled, often more or less constricted between the longitudinally or obliquely oriented, elliptic to oblong seeds which generally have a relatively large terminal or sub-terminal white aril.

Taxa attributed to this Group include the following: *A. amyctica* R.S. Cowan & Maslin sp. nov., *A. ancistrophylla* C.R.P. Andrews var. *ancistrophylla*, *A. ancistrophylla* var. *lissophylla* (J.M. Black) R.S. Cowan & Maslin, *A. ancistrophylla* var. *perarcuata* R.S. Cowan & Maslin var. nov. and *A. whibleyana* R.S. Cowan & Maslin sp. nov.

The "Group" is closely related to the "*A. enervia* Group" whose members lack the red-brown resin-hairs so common in the "*A. ancistrophylla* Group", as well as having longer pods.

Key to taxa of "*A. ancistrophylla* Group"

1. Flowering peduncles 6-15 mm long; pods narrowly oblong, 5-7 mm wide; seeds oblique in pods; phyllodes 2.5-8 mm wide. South Australia ..... 3. *A. whibleyana*
1. Flowering peduncles 1.5-7 mm long; pods linear, 2-3 mm wide; seeds longitudinal in pods; phyllodes 1-5 mm wide. Western Australia (except *A. ancistrophylla* var. *lissophylla*)
   2. Phyllode tip sharply to coarsely pungent, the nerves strong, discrete and paler than inter-nerve spaces ..... 1. *A. amyctica*
   2. Phyllode tip not pungent, the nerves obscure to ± evident, not paler than inter-nerve spaces
      3. Pods strongly arcuate to openly once-coiled; phyllode tip rounded with a minute mucro ..... 2c. *A. ancistrophylla* var. *perarcuata*
      3. Pods straight to shallowly curved; phyllode tip acute to subacute
         4. Phyllodes (7)10-20 times longer than wide; pods glabrous. Mostly South Australia, infrequent in Western Australia and northwest Victoria ..... 2b. *A. ancistrophylla* var. *lissophylla*
         4. Phyllodes mostly 3-8 times longer than wide; pods ± appressed-puberulous. Western Australia ..... 2a. *A. ancistrophylla var. ancistrophylla*

1. Acacia amyctica R.S. Cowan & Maslin, sp. nov.

Frutex obconicus 0.7-1.5 m altus, corona aperte ramosa, 1-1.5 m diametro, ramulis leviter angulatis sparse vel parce appresso-puberulis. *Stipulae* caducae. *Phyllodia* anguste oblanceolata ad elliptico-oblanceolata, acuta vel sub-obtusa, mucronata, grosse ad acute pungentia, versus basem angustata ad pulvinum 0.5-1 mm longum, laminis 15-25 mm longis, 2.5-4 mm latis, ratione horum 3.5-7, rigidis, ascendentibus ad erectis, rectis ad leviter curvatis, glabris, obscure medio-viridibus; nervi numerosi, arcte paralleli, valde discreti, pallidiores quam spatiis internervis, stomatibus distinctis, plus minusve elevatis, glande una, parva, inconspicua, basali. *Pedunculi* binati in quoque axilla, 4-7 mm longi, plus minusve appresso-puberuli vel glabri. Capitula globularia, aurea, 3-3.5 mm diametro, 18-25-floribus, bracteolis obovatis ad spathulatis, ciliolatis. *Flores* 5-meri, *sepalis* longitudine 1/3 petali aequantia, discretis oblongo-spathulatis ciliolatis, *petalis* discretis glabris. *Ovarium* albo-appresso-puberulum. *Legumina* (immatura et valvis apertis) linearia, inter semina non constricta, ad 6 cm longa, 3 mm lata, firme chartacea, valde curvata, glabra, marginibus pallidioribus. *Semina* longitudinalia, non visa.

Typus: 1 km N of Salmon Gums on Coolgardie-Esperance Highway, Western Australia, 25 September 1983, *B.R. Maslin* 5448 (*holo*: PERTH 00700517; *iso*: MO, NY, distributed as *Acacia ancistrophylla*).

Obconic *shrubs* 0.7-1.5 m tall with openly branching crown 1-1.5 m diam. *Bark* smooth, light grey. *Branchlets* slightly ribbed, ± appressed-puberulous. New shoots appressed-puberulous. *Stipules*

caducous. *Phyllodes* narrowly oblanceolate to elliptic-oblanceolate, 15-25 mm long, 2.5-4 mm wide, l:w = 3.5-7, rigid, ascending to erect, straight to slightly curved, glabrous, dull medium-green; apex acute or sub-obtuse, mucronate, sharply to coarsely pungent; pulvinus 0.5-1 mm long; nerves numerous, closely parallel, strong, discrete and paler than inter-nerve spaces; stomata distinct, raised; gland single, small, inconspicuous, located on adaxial margin at base of blade. *Peduncles* paired in each axil, 4-7 mm long, more or less appressed-puberulous or glabrous; basal peduncular bract ± semicircular, concave, appressed-puberulous, persistent to anthesis; heads globular, golden, 3-3 5 mm diam., 18-25-flowered; bracteoles obovate to ± spathulate, ciliolate. *Flowers* 5-merous. *Sepals* 1/3 as long as petals, free or rarely connate basally, oblong-spathulate, ciliolate. *Petals* free, glabrous. *Ovary* white appressed-puberulous. *Pods* (immature, also dehisced valves) linear, not constricted between seeds, to 6 cm long, 3 mm wide, firmly chartaceous, strongly curved to openly 1-1 1/2-coiled, glabrous, red-brown, the margins paler. *Seeds* longitudinally arranged in pods, not seen.

Other specimens examined. WESTERN AUSTRALIA: 24.75 km W of Grass Patch, 23.4 km W of Norseman-Esperance Highway on Grass Patch road, *M.A. Burgman* 1885 and *S. McNee* (PERTH); 11.5 km N of Salmon Gums towards Norseman, *B.R. Maslin* 2456 (CANB, PERTH); 4 km S of Peak Eleanora, Peak Charles National Park, *c.* 45 km W of Salmon Gums, *K. Newbey* 6340 (PERTH); 15 km E of Dunn Swamp, *c.* 80 km NE of Ravensthorpe, *K. Newbey* 8132 (PERTH); 95 km S of Norseman, *N. Perry* 687 (PERTH).

Distribution. Most collections are from the Salmon Gums-Grass Patch area (between Norseman and Esperance) but also further west from Peak Charles National Park (*c.* 50 km west of Salmon Gums) and near Dunn Swamp (*c.* 80 km northeast of Ravensthorpe), southwest Western Australia.

Habitat. Frequent on well-drained loam in flatlands in low woodland of *Eucalyptus gardneri* or *E. flocktoniae*; also on sandy clay in open mallee shrubland.

Flowering and fruiting periods. Flowers about August to September; immature pods in November, maturing about December.

Affinities. Acacia amyctica differs from other members of the "*A. ancistrophylla* Group" in its sharply to coarsely pungent phyllodes with the nerves strong, discrete and paler than inter-nerve spaces. It resembles *A. whibleyana* in its pungent phyllodes but that species, in addition to being well-separated geographically (endemic in South Australia), has wider pods in which the seeds are arranged obliquely, and phyllodes with immersed nerves and obscure stomata. A more distant relative is *A. lineolata* subsp. *multilineata* which has persistent stipules, phyllodes about ten times longer than wide with 1-3 supra-basal glands, larger heads, linear bracteoles and straight to slightly curved pods. There is also a superficial resemblance to *A. hadrophylla* R.S. Cowan & Maslin (see "*A. densiflora* Group" above).

Conservation status. A Priority 2 taxon in the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The specific epithet is in allusion to the pungent phyllodes, a character separating it from its nearest relatives, from *amycticus*, Latin for sharp, pungent.

2. Acacia ancistrophylla C.R.P. Andrews, J. Western Australia Nat. Hist. Soc. 1: 40 (1904)

Typus: near Dundas, Western Australia, October 1903, Herb. *Cecil Andrews* (*holo*: NSW, *fide* Maslin & Cowan 1994; *iso*: K, NSW, PERTH 00739995, 00740403 and 00740411).

Dense, rounded or flat-crowned *shrubs* 0.6-2.5 m tall, spreading 3-6 m diam, rarely obconic, small trees 1.3-1.6 m tall. *Bark* grey, smooth or fissured at base of main stems. *Branchlets* angled or terete or scarcely ribbed, sometimes glabrous but usually more or less appressed-puberulous and soon glabrescent. New shoots bronzish-green, sparingly to densely invested with minute, red-brown resin-hairs. *Stipules* caducous. *Phyllodes* oblanceolate, narrowly oblanceolate, oblong-oblanceolate, linear or linear-oblanceolate, 12-48 mm long, (1)1.5-5 mm wide, l:w = 3-20, coriaceous to rigid-coriaceous, patent to erect, straight to slightly curved, glabrous, normally green; apex straight to uncinate, acute, mucronate, sometimes rounded-obtuse with blunt mucro or apiculum; nerves numerous, closely parallel, obscure to ± distinct but then concolorous with the inter-nerve spaces; stomata distinct to obscure; gland single, at or near base of blade. *Peduncles* 2 per node, 1.5-5.5 mm long, glabrous or appressed-puberulous with few to many red resin-hairs as well as white or grey non-resinous hairs; basal peduncular bract rounded, concave, appressed-puberulous; heads globular, mid- to dark-golden, 6-7 mm diam (fresh), 3-4 mm diam. (dry), 11-23-flowered; bracteoles obovate, puberulous with red resin-hairs. *Flowers* mostly 5-merous with some 4-merous ones intermixed. *Sepals* 1/4-1/2 as long as petals, free or rarely connate basally, oblong, obtuse or truncate, apex with red resin-hairs. *Petals* free, glabrous. *Ovary* papillose, puberulous or appressed-puberulous. *Pods* linear, somewhat irregularly raised over seeds, slightly constricted or not between seeds, to 4 cm long and 2.5-3 mm wide, chartaceous to thinly coriaceous, straight to strongly curved or openly once-coiled, appressed-puberulous with many red resin-hairs, sometimes also with appressed white hairs, or glabrous, brown, the margins obscure. *Seeds* longitudinally arranged in pods, oblong or widely elliptic, 3-3.5 mm long, 1-2.2 mm wide, 1 mm thick, dull tan or dark brown; pleurogram narrowly U-shaped; areole small, c. 1/6 as long as seed; aril terminal, conical, 1/2 or more as long as seed or a small, sub-terminal, closely appressed, thin plate of tissue, white or cream.

Distribution. Widespread in southwest Western Australia, with one variety, var. *lissophylla*, extending to southern South Australia and northwest Victoria.

Affinities. Within its group, *A. ancistrophylla* is nearest *A. whibleyana* which has longer, glabrous peduncles and broader pods with obliquely oriented seeds. *Acacia whibleyana* and *A. ancistrophylla* var. *lissophylla* are the only members of the "*A. ancistrophylla* Group" occurring outside W.A. *Acacia ancistrophylla* is also related to *A. lineolata* Benth. (see "*A. enervia* Group" below) which has phyllodes with one to three, mostly more than one, gland along the adaxial margin.

The differences among the three varieties comprising the species are subtle and difficult to express: var. *ancistrophylla* has straight or slightly curved, puberulous pods and its phyllodes have the tip often curved to uncinate; it is most similar to var. *perarcuata* which has rounded, obtuse phyllodes with a short mucro or apiculum and ± coiled pods. The typical variety is also quite similar to *A. amyctica* which has sharply to coarsely pungent phyllodes. Variety *lissophylla* differs from the other varieties by its phyllode proportions, glabrous pods and seed shape.

Discussion. In the protologue, Andrews appears confused regarding whether the flowers are 4-merous or 5-merous but examination of representative specimens explains the apparent confusion, for the flowers vary in number of parts. Although they are mostly 5-merous, one specimen has been noted with a preponderance of 4-merous flowers (see under variety *ancistrophylla*).

2a. Acacia ancistrophylla C.R.P. Andrews var. **ancistrophylla**

Shrubs 0.6-2.5 m tall, spreading to 3 m diam. *Bark* grey, smooth throughout. New shoots densely covered with red-brown resin-hairs. *Phyllodes* oblanceolate to oblong-oblanceolate, 12-25(40) mm long, 2.5-4.5 mm wide, l:w = 3-8(15), ascending, straight; apex acute, curved to uncinate, mucronate; nerves obscure; stomata obscure. *Peduncles* 2-4 mm long; heads 15-23-flowered. *Sepals c.* 1/2 as long as petals, free. *Pods* 2.5 mm wide, straight to shallowly curved, puberulous. *Seeds* oblong, 3-3.5 mm long, 1-1.8 mm wide, dull tan, the aril conical, terminal, 1/2 or more as long as seed, white.

Selected specimens examined. WESTERN AUSTRALIA: near Coolgardie, September 1920, *C.A. Gardner s.n.* (PERTH 00700436); 12.7 km W of Newdegate, *J.W. Green* 4464 (PERTH); Cowcowing, *M. Koch* 1034 (PERTH); 10 km E of Kulja towards Mollerin, *B.R. Maslin* 4446 (PERTH); 62.5 km by road S of Queen Victoria Rock, *B.R. Maslin* 5414 (PERTH); 46 km S of Duri, *c.* 92 km SE of Southern Cross, *K. Newbey* 6078 (AD, PERTH); on Cundeelee [1: 250 000] map sheet at 651178, *B. Severne* 74145 (PERTH).

Distribution. Scattered from Wubin (*c.* 22 km north of Dalwallinu) and Newdegate (*c.* 50 km east of Lake Grace) east to Cundeelee Mission (*c.* 200 km east of Kalgoorlie) and near Salmon Gums, southwest Western Australia.

Habitat. Common to very common in woodland and mallee communities (*Eucalyptus erythronema, E. sheathiana, E. salubris, E. diptera, E. salmonophloia*) on flats, hillsides and ridges in loam, clay or sandy clay.

Flowering and fruiting periods. Flowers in August-September; pods with mature seeds have been collected in December and January.

Variation. One collection (*N. Perry* 548 from Pingaring) has more or less pungent phyllode tips, similar to those of *A. amyctica*, but the nerves are obscure as in var. *ancistrophylla.* The J.W. Green collection cited above has strongly curved phyllodes, some even sigmoidally curved, and a higher proportion of 4-merous flowers than is typical. The Koch collection cited has glabrous peduncles that are longer than usual.

Conservation status. Not under threat.

2b. Acacia ancistrophylla var. **lissophylla** (J.M. Black) R.S. Cowan & Maslin in Whibley & Symon, Acac. S. Australia, 206 (1992).

Basionym. Acacia sclerophylla Lindley var. *lissophylla* J.M. Black, Trans. & Proc. Roy. Soc. South Australia 47: 369 (1923). *Lectotype* (here selected): Muloowortie, near Pine Point, E coast of Yorke Peninsula, South Australia, *R. Tate s.n.* (AD 97422173, flowering branchlet on left with slip-on tag; *iso*: PERTH 00962813-fragment ex AD). *Paralectotype*: (1) Muloowortie, near Pine Point, Yorke Peninsula, November 1879, *J.G.O. Tepper s.n.* (AD 97830007); (2) Yorke Peninsula, Ardrossan, 1880, Herb. *Tate* (AD 97426161); Yorke Peninsula, Herb. *J.M. Black s.n.* (AD 96820232); (3) Yorke Peninsula, Ardrossan, September 1880, *J.G.O. Tepper s.n.* (AD 97324140).

[*A. lineolata* auct. non Benth.; A.B. Court in J.H. Willis, Handb. Pl. Victoria 2: 237 (1973).]

Shrubs 1-3 m tall, spreading to 5 m diam. *Branchlets* angled, glabrous or sparsely appressed-puberulous and soon glabrescent. New growth only sparingly invested with red resin-hairs. *Phyllodes* linear or linear-oblanceolate, (10)15-48 mm long, (1)1.5-3.5(4) mm wide, l:w = (7)10-20, patent to erect, straight to slightly curved; apex curved, acute; nerves and stomata more or less distinct. *Peduncles* 2-5.5 mm long, appressed-puberulous with mixture of red resin-hairs and white non-resin hairs; heads 11-18-flowered. *Sepals* 1/4-1/3 as long as petals, free or rarely connate basally. *Pods* linear, raised over and slightly constricted between seeds, to 3 mm wide, straight to shallowly curved, glabrous. *Seeds* widely elliptic, 3 mm long, 2.2 mm wide, dark-brown, the aril sub-terminal, cream-coloured, consisting of a thin plate of tissue closely appressed to seed.

Selected specimens examined. WESTERN AUSTRALIA: 28 km SW of Balladonia Hotel, Dundas Nature Reserve, *K. Newbey* 11745 (PERTH).
SOUTH AUSTRALIA: 15 miles [24 km] from Poochera towards Minnipa on Eyre Highway, *E.M. Canning* WA/68 2267 (PERTH); *c.* 20 km E of Minnipa, *N.N. Donner* 2501 (PERTH); 40.7 km W of Kyancutta towards Ceduna on Eyre Highway, *N. Hall* H80/62 (BRI, PERTH); 18 miles [28.8 km] SE of Ceduna on Flinders Highway, 23 August 1974, *H. Henderson s.n.* (PERTH 00694711); *c.* 24 km due E of Kadina, *B.R. Maslin* 4525 (CANB, MEL, NSW, PERTH); *c.* 24 km E of Kimba on Eyre Highway, *A.E. Orchard* 2345 (PERTH); *c.* 10 km NE of Port Neill on Lincoln Highway, *D.J.E. Whibley* 1977 (K, PERTH). VICTORIA: Goschen area, 14 September 1989, *T. Langdon s.n.* (MEL 118318); Rosebery, September 1913, *D.C. Trainor s.n.* (MEL 1500550).

Distribution. Western Australia, South Australia and Victoria: known by three collections from Western Australia, from near Balladonia, Kalannie and from between Lake Grace and Newdegate; in South Australia scattered from Ceduna on western Eyre Peninsula east to Pine Point on the Yorke Peninsula; and in Victoria by two collections from the north-western region. We have not seen specimens from the Murray region of South Australia, although Whibley (1980) recorded *A. sclerophylla* var. *lissophylla*, the basionym, from this area. A.B. Court (1973: 237) recorded *A. lineolata* Benth. as occurring in Victoria but this apparently referred to the present taxon.

Habitat. Grows mostly on flats in sandy loam over limestone usually in mallee communities.

Flowering and fruiting periods. Flowers from August to October; pods with mature seeds have been collected in September and November. None of the Western Australian collections are fruiting and only very few of those from South Australia; additional fruiting material would be valuable.

Authorship of the name. During the course of David Symon's revision of Whibley's (1980) *Acacia* handbook, we supplied him with our notes on several taxa, as he acknowledges. At the time, our manuscript of the present paper which incorporated the above combination was in press and the relevant pages were sent to Symon. Unfortunately, publication of our paper was delayed but Symon attributed the combination to us, acknowledged the source, and indicated the combination was "in press". Consequently, "in" is the correct connecting word, as seems clear from Art. 46.2, Note 1 of the Code (Greuter *et al.* 1994).

Typification. The author responsible for the basionym failed to cite any collections in the protologue, only remarking that it was from the Yorke Peninsula. There are several sheets at AD of this variety but the one chosen as lectotype best fits the protologue morphologically and geographically and also is annotated by Black on a small slip-on label as "*sclerophylla* Lindley var. *lissophylla*". On another AD sheet (97830007) there are two other branchlets, one in flower, the other in fruit from the type

locality, collected by J.G.O. Tepper; at least the flowering branchlet is considered part of the original material but the fruiting one may not have been, since Black did not mention pods in the protologue.

Discussion. Variety *lissophylla* is transferred from *A. sclerophylla* where it was certainly misplaced; although that species is related to *A. ancistrophylla*, it is very distinct in its phyllode nervature (i.e. 3 nerves per face) and its resinous, usually pustulate, branchlet tips. The distinctions between this variety and the typical one are inconclusive and further investigation of these taxa is needed to resolve their status.

Variation. The Henderson collection cited above, as well as another South Australian collection (*M.H. Simmons* 1756 from the Gawler Range area), has the widest phyllodes in the variety. The Whibley collection cited has almost sessile flower-heads

Conservation status. Widely ranging but poorly known; 3K, using the criteria of Briggs & Leigh (1988).

2c. Acacia ancistrophylla var. **perarcuata** R.S. Cowan & Maslin, var. nov.

A var. *ancistrophylla frutice* 0.6-1.6 m altis et ad 6 m expansis, *phyllodiis* rotundatis *obtusis* mucronatis vel apiculatis 12-23 mm longis, 2.5-5 mm latis, ratione horum 3-7, ascendentibus, nervis stomatatibusque obscuris ad plus minusve infirme manifestis, capitulis 11-15-floribus, *sepalis* discretis, *leguminibus* valde curvatisad aperte 1-spiralibus, plus minusve appresso-puberulis, arillo albo, terminali, conico, longitudine seminis 1/2 superanti differt.

Typus: *c.* 3.5 miles [5.6 km] NNW of Korbel towards Hines Hill, Western Australia, 3 August 1971, *B.R. Maslin* 1758 (*holo*: PERTH 00700940; *iso*: CANB, K, NY).

Rounded or obconic *shrubs* 0.6-1.6 m tall, spreading to 6 m across. New growth densely covered with red-brown resin-hairs. *Phyllodes* oblanceolate to narrowly oblanceolate, rounded, obtuse, with blunt, very short mucro, 12-23 mm long, 2.5-5 mm wide, 3-7 times longer than wide, ascending; nerves and stomata obscure to more or less weakly evident. *Peduncles* 1-3 mm long, somewhat appressed-puberulous with red resin-hairs; heads 11-15-flowered. *Sepals c.* 1/3 as long as petals, free. *Pods* (sub-mature) not constricted between seeds, strongly arcuate to openly once-coiled, somewhat appressed-puberulous with many red resin-hairs and/or white ones. *Seeds* (sub-mature) with conical, terminal, white aril, 1/2 or more as long as seed.

Selected specimens examined. WESTERN AUSTRALIA: Walgoolan, *J.S. Beard* 6193 (PERTH); 39.4 km from Moorine Rock towards Perth along Great Eastern Highway, *E.M. Canning* WA/68 2731 (PERTH); 40 km south of Norseman, *P.E. Conrick* 1705 (PERTH); Carrabin, *R. Coveny* 8351 and *B. Haberley* (NSW, PERTH); 12.3 km E of Wyalkatchem towards Trayning, *R.J. Cumming* 2251 (MELU, PERTH); Mukinbudin, *C.A. Gardner s.n.* (PERTH 700428); *c.* 9 miles [14.4 km] due NE of Bruce Rock, *B.R. Maslin* 1813 (AD, BRI, PERTH) and 2374 (PERTH); 10 km due SE of Hines Hill, *B.R. Maslin* 6472 (PERTH); 7 km N of Mount Andrew, *c.* 116 km SE of Norseman, *K. Newbey* 7777 (MEL, PERTH); 5.9 km SE of Bruce Rock on main road to Narembeen, *M.D. Tindale* 3738 (NSW, PERTH).

Distribution. Occurring mostly within a radius of about 50-70 km from Merredin, namely, Mukinbudin south to Bruce Rock and southeast to Carrabin with three outliers, two of which are from

35-40 km south of Norseman and one near Mt Andrew which is *c.* 116 km southeast of Norseman, southwest Western Australia.

Habitat. In low *Eucalyptus (E. salmonophloia, E. salubris, E. diptera, E. eremophila)* woodland on red sand, clayey loam and loam.

Flowering and fruiting periods. Flowers from August to September; pods with nearly mature seeds have been collected in December. Mature pods and seeds are needed, especially from the Norseman area, to confirm the distribution given above, since some of the specimens are assigned here largely on the basis of phyllode characters.

Conservation status. A Priority 3 taxon in the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The varietal epithet refers to the strongly arcuate pods, from *per*, Latin prefix denoting an extreme condition and *arcuatus*, Latin for curved.

3. Acacia whibleyana R.S. Cowan & Maslin, sp. nov.

Frutex densus 1-2.5 m altus, 2.5-4 m diametro expansus, ramulis initio angularibus demum teretibus glabris, foliorum cicatricibus elevatis ornatis: *Stipulae* non visae. *Phyllodia* elliptica ad oblanceolata, plus minusve inaequilateralia, ad apicem arcuata ad rostriformia, aliquando recta, apiculata, pulvino 0.5 mm longo, laminis 9-30 mm longis, 2.5-8 mm latis, rigidis, crassis, vulgo rectis sed interdum leviter curvatis, glabris, nervis numerosis, arcte parallelis tenuibus, immersis, glande inconspicua, laminarum prope basem. *Pedunculi* 2 in quoque axilla, 6-15 mm longi, glabri; capitula globularia, aurea, 2.5-5 mm diametro, 18-19-floribus, bracteolis plus minusve spathulatis, ciliatis. *Flores* 5-meri. *Sepala* 1/3-1/2 petalis breviora, discreta, oblongo-oblanceolata. *Petala* elliptica, discreta, glabra, patentia. *Legumina* anguste oblonga, ad 4.5 cm longa, 5-7 mm lata, coriacea, plus minusve undulata et arcuata ad circinnata, glabra, apiculata. *Semina* obliqua, 2.5-3 mm longa, 2-2.2 mm lata, 1.2 mm crassitie, sub-nitida, atrate brunneo-nigra; areola elevata, arillo magno, terminali, funiculi 2-plicatum formata.

Typus: Eyre Peninsula [precise locality withheld for conservation reasons], South Australia, 3 December 1965, *C.R. Alcock* 831 (*holo*: PERTH 00721786; *iso*: AD, CANB, K).

Dense *shrubs* 1-2.5 m tall, spreading 2.5-4 m diam. *Branchlets* angular at first but soon terete, glabrous, with raised, prominent old phyllode-scars. *Stipules* not seen. *Phyllodes* elliptic to oblanceolate, more or less inequilateral, 9-30 mm long, 2.5-8 mm wide, 2-4.5 times longer than wide, rigid, thick, ascending, mostly straight, occasionally slightly curved, glabrous, dull mid-green; apex curved to rostriform or occasionally straight, apiculate; pulvinus 0.5 mm long; nerves numerous, closely parallel, fine, immersed, anastomoses infrequent; gland small, inconspicuous, near base of blade. *Peduncles* 2 per node, 6-15 mm long, glabrous, slender; basal peduncular bracts persistent until about anthesis, ± semicircular, ciliolate; heads globular, bright golden, 2.5-5 mm diam., 18-19-flowered; bracteoles spathulate with the blade ciliate. *Flowers* 5-merous. *Sepals* 1/3-1/2 petal length, free, oblong-oblanceolate. *Petals* elliptic, free, glabrous, spreading. *Ovary* minutely puberulous. *Pods* narrowly oblong, slightly raised over but not constricted between seeds, to 4.5 cm long, 5-7 mm wide, coriaceous, slightly undulate, shallowly to markedly curved, sometimes circinnate, smooth, glabrous, apiculate, the margins somewhat thickened. *Seeds* obliquely arranged

in pods, widely elliptic, 2.5-3 mm long, 2-2.2 mm wide, 1.2 mm thick, sub-glossy, dark brown-black; pleurogram U-shaped; areole raised; aril large, formed by two terminal loops of fleshy funicle.

Other specimens examined. SOUTH AUSTRALIA: Eyre Peninsula [precise localities withheld for conservation reasons], *B. Copley* 4762, 4916 and 4917 (all AD), *B. Hadlow* BH300 and *A.B. Court* (CBG, PERTH), *M. Jahn s.n.* (CBG 8803933 and PERTH 01048457), *K.B. Warnes* 98 (AD) and *s.n.* (AD 97108520, 97108582 and 97108521).

Distribution. Restricted to a near-coastal area south of Tumby Bay on the Eyre Peninsula in South Australia.

Habitat. Grows on limestone and loam, sometimes near salt swamps.

Flowering and fruiting periods. Flowering in August; pods with mature seeds have been collected in December and January.

Affinities. Acacia whibleyana is most closely related to *A. ancistrophylla* C.R.P. Andrews (see above) which differs most obviously in having usually appressed-puberulous branchlets that lack raised phyllode scars, shorter peduncles and narrower pods with the seeds arranged longitudinally. Of the three varieties of *A. ancistrophylla*, var. *lissophylla* occurs within the same general region as *A. whibleyana*; in addition to the characters already noted this variety is distinguished from the new species by its generally narrower phyllodes of a different shape. *Acacia amyctica* R.S. Cowan & Maslin from Western Australian (see above) is also related but its phyllodes are coarsely pungent and have distinct, raised nerves that are paler than the inter-nerve spaces, raised stomata, 18-35-flowered heads and pods that are narrower with the seeds arranged longitudinally.

Conservation status. 2E (Endangered), using the criteria of Briggs & Leigh (1988). The new species is currently known from less than 50 plants growing on road verges in a very localized area (M. Jusiatis and B. Sorensen, pers. comm.).

Etymology. The specific name is given to honour David J.E. Whibley who has made a major contribution to our knowledge of the Wattles in South Australia. His 1980 publication on the subject, as well as the Whibley and Symon revised edition in 1992, is an outstanding example of a true handbook with each species described precisely but succinctly and illustrated with habit-photographs as well as line drawings. We take great pleasure in perpetuating his name and recognizing his contributions in this way.

The "*Acacia enervia* Group"

The taxa of this "Group" are characterized by terete to flat phyllodes which commonly have the apex acute to short-acuminate and drawn out in a delicate curving tip; the numerous closely parallel nerves vary from obscure to conspicuously raised. The heads are rather small, borne on filiform peduncles, and the flowers are 4- or 5-merous with the perianth parts free or nearly free. The pods are flat and linear.

There are three species, each comprising two subspecies, included in the Group, namely, *A. enervia* Maiden & Blakely subsp. *enervia*, *A. enervia* subsp. *explicata* R.S. Cowan & Maslin subsp. nov.,

A. inceana Domin subsp. *inceana*, *A. inceana* subsp. *conformis* R.S. Cowan & Maslin subsp. nov., *A. lineolata* Benth. subsp. *lineolata, A. lineolata* subsp. *multilineata* (W. Fitzg.) R.S. Cowan & *Maslin*, comb. et stat. nov. (this last taxon was formerly referred by us to the "*Acacia multilineata* Group", *cf.* Cowan & Maslin 1990)

This informal Group is closely allied to the "*A. ancistrophylla* Group" whose members differ in having new growth, branchlets and other parts, puberulous with white and/or red-brown resin-hairs and much shorter, often curved to coiled pods.

Key to Taxa of "*A. enervia* Group"

1. Flowers 4-merous; pods 3-4 mm wide
  2. Phyllodes perfectly terete; pods tan; plants from Kalgoorlie area SE to Binneringie Station (E of 120° 30' long.) ..... 2a. A. *inceana* subsp. *inceana*
  2. Phyllodes sub-terete to flat; pods pale dull brown; plants from Morawa to Kalannie SE to Hines Hill and Boorabbin (W of 120° 30' long.) ..... 2b. *A. inceana* subsp. *conformis*
1. Flowers 5-merous; pods 2-3 mm wide
  3. Phyllode glands (inconspicuous) 0 or 1, when present situated from distal end of pulvinus to 0.5 (1) mm above; seed aril white; nerves of phyllodes weak to obscure
    4. Phyllodes terete to sub-terete, often with pustulate stomata ..... 1a. *A. enervia* subsp. *enervia*
    4. Phyllodes flat, linear to narrowly oblanceolate, stomata not pustulate ..... 1b. *A. enervia* subsp. *explicata*
  3. Phyllode glands (inconspicuous) 1-3 along adaxial margin, the lowermost (3)5-21 mm above pulvinus; seed aril yellow; phyllode nerves distinct, slightly raised
    5. Phyllodes linear to linear-oblanceolate or oblong-elliptic, ± 20 times longer than broad, curved-acute, not pungent; sepals free or to 1/2-united; plants often of saline situations on sandy or stony loam ..... 3a. *A. lineolata* subsp. *lineolata*
    5. Phyllodes oblong-oblanceolate to oblong-elliptic, 10-13 times longer than broad, acute to short-acuminate, coarsely to sharply pungent, rigid-coriaceous; sepals always free; plants of sand plains or on rocky clay ..... 3b. *A. lineolata* subsp. *multilineata*

1. Acacia enervia Maiden & Blakely, J. Roy. Soc. Western Australia 13: 8, pl. 8, figs 12-19 (1928)

Typus: Hines Hill, Western Australia, 2 October (*sphalm.* "September" in protologue) 1923, *M. Koch* 2806 (*holo*: NSW 195719; *iso*: K, MEL, PERTH 00969737, 00969729 and 00750484-fragment ex NSW).

Dense, rounded *shrubs*, often becoming obconic, rarely small trees, 0.6-3.5 m tall, spreading 1-3.5 m diam.. *Bark* grey, fibrous, fissured. *Branchlets* slightly angular, glabrous or somewhat appressed-puberulous apically and glabrescent. *Phyllodes* flat and linear to narrowly oblanceolate or

terete, 2-8.5 cm long, 0.8-6 mm wide, inclined to erect, straight, glabrous or more or less appressed-puberulous, glabrescent, pale to dark green; apex acute to short-acuminate, slender and curved; nerves numerous, closely parallel, indistinct to obscure; stomata occasionally somewhat pustulate but indistinct; gland small, inconspicuous, at distal end to 0.5(1) mm above pulvinus or absent. *Peduncles* 1-3 per axil, 2-9 mm long, filiform, sparsely puberulous, appressed-puberulous or glabrous; heads globular, medium to deep golden yellow, 3-5 mm diam., 18-33-flowered; bracteoles obovate to ± spathulate, ciliolate. *Flowers* mostly 5-merous, sepals or petals sometimes only 4. *Sepals* 1/2-2/3 petal length, free or sometimes partly *coherent* but becoming free. *Pods* (sub-mature) linear, somewhat constricted between seeds, to 8.5 cm long, 2-2.5 mm wide, thinly coriaceous, straight or shallowly curved, glabrous. *Seeds* longitudinally arranged in pods, narrowly elliptic to oblong, 3-4 mm long, 1.5 mm wide, black, the aril terminal, white.

Distribution. Wide-ranging in southwest Western Australia from near Jibberding (which is *c.* 50 km northeast of Dalwallinu) southeast to near Lake Grace, and Lake Magenta (*c.* 80 km east-northeast of Ravensthorpe) east to near Clear Streak Well (which is *c.* 70 km east-southeast of Norseman).

Typification. The label on the holotype in Koch's hand clearly states the date of collection as "2 X 1923" but it was apparently mistakenly transcribed by Maiden and Blakely as September.

Affinities. Very near *A. lineolata* Benth. but differing in the number and position of the phyllode glands (one at the distal end or up to 1 mm above the pulvinus in *A. enervia*, one or more along the adaxial margin (3)5-21 mm above the pulvinus in *A. lineolata*) and the prominence of the nervature, as well as in the colour of the aril (white in this species and yellow in *A. lineolata*). *Acacia enervia* subsp. *explicata* and *A. lineolata* subsp. *lineolata* are especially similar and can easily be confused, particularly when they occur sympatrically (for example, on a saline flat about 2 km west of the Wongan Hills: *cf. B.R. Maslin* 5368, subsp. *explicata* and *B.R. Maslin* 5369, subsp. *lineolata*).

Infraspecific taxa. Acacia enervia comprises two subspecies of which the typical one is recognized by its slightly smaller heads and terete phyllodes which often appear micro-pustulate because of the stomata.

1a. Acacia enervia Maiden & Blakely subsp. **enervia**

Phyllodes terete to sub-terete, 2-6 cm long, 0.8-2 mm wide; nerves obscure; stomata often micro-pustulate. Heads 3-4 mm diam. *Pods* to 8.5 cm long, shallowly curved. *Seeds* oblong.

Selected specimens examined. WESTERN AUSTRALIA: Bruce Rock, September 1933, *E.T. Bailey s.n.* (CANB, K, PERTH 00683485 and 00683434); between Corrigin and Quairading, *W.E. Blackall* 3245A (PERTH); 2.2 miles [3.5 km] E of Warralakin towards Bullfinch, *R. Cumming* 2368 (PERTH); *c.* 5 miles [8 km] due SE of Hines Hill, *B.R. Maslin* 1732 (MEL, PERTH); 8 km N of Southern Cross towards Bullfinch, *B.R. Maslin* 3957 (CANB, K, MEL, NY, PERTH); 3.5 km N of Queen Victoria Rock on road to Coolgardie, *B.R. Maslin* 5406 (CANB, K, MEL, PERTH); 6 km SE of Cave Hill, *c.* 75 km NW of Norseman, *K. Newbey* 6135 (PERTH); 34 km SW of 90 Mile Tank, Frank Hann National Park, Norseman-Lake King road, *K. Newbey* 6506 (NY, PERTH); 8 km N of Clear Streak Well, *c.* 70 km ESE of Norseman, *K. Newbey* 7693 (PERTH); just outside Peak Charles parking area, *M.H. Simmons* 312 (PERTH); Kununoppin, 8 February 1911, *F.E. Victor s.n.* (PERTH 00683361).

Distribution. Found from Kununoppin (*c.* 60 km northwest of Merredin) east to near Coolgardie and south to Frank Hann National Park (located 30-110 km east-northeast of Lake King) and near Clear Streak Well (which is *c.* 70 km east-southeast of Norseman) in southwest Western Australia.

Habitat. In sand or loam, rarely clay, in open eucalypt woodland or open mallee scrub.

Flowering and fruiting periods. Flowering in September and October with one collection in December; immature pods have been collected in November, December and February.

Conservation status. Not under threat.

1b. Acacia enervia subsp. **explicata** R.S. Cowan & Maslin, subsp. nov.

Phyllodia plana, linearia ad anguste oblanceolata, 2.5-8.5 cm longa, 1-6 mm lata; capitula 4-5 mm diametro; *legumina* ad 7 cm longa, saepe leviter curvata; *semina* anguste elliptica vel oblongo-elliptica.

Typus: 19 km N of Wongan Hills near Kondut in broad saline "floodway", Western Australia, 30 September 1984, *G. Craig* 1608 (*holo*: PERTH 01469924; *iso*: CANB, PERTH 00697850).

Phyllodes flat, linear to narrowly oblanceolate, 2.5-8.5 cm long, 1-6 mm wide; nerves more or less distinct. Heads 4-5 mm diam. *Pods* to 7 cm long, often slightly curved. *Seeds* narrowly elliptic or oblong-elliptic.

Selected specimens examined. WESTERN AUSTRALIA: Walyahmoning Rock, *Baynes Museum* 56 (PERTH); Bencubbin, *W.E. Blackall* 832 (PERTH); 12-14 km E of Lake Grace towards Newdegate, *G. Craig* 1512 (PERTH); 9.6 km N of Ballidu towards Pithara, *G. Craig* 1595b (PERTH); 9 km E of Pithara towards Kalannie, *G. Craig* 1599 (K, PERTH); 18.2 km W of Koorda towards Cadoux, *R.J. Cumming* 2311 (PERTH); 1 km N of "Koobabbie" House, Coorow, *A. Doley* 9B (PERTH); 10 km E of Mollerin towards Beacon, *B.R. Maslin* 4140 (PERTH); 4 km W of Wyalkatchem, *B.R. Maslin* 4449 (PERTH, TLF); about 2 km W of Wongan Hills on road to Piawaning, *B.R. Maslin* 5368 (MEL, PERTH); 4 km from Coolgardie on road to Queen Victoria Rock, *B.R. Maslin* 5404 (AD, K, NSW, NY, PERTH); 1 km S of Yellowdine, *K. Newbey* 5985 (PERTH); 1 km S of Ghooli microwave station, *c.* 20 km E of Southern Cross, *M.H. Simmons* 1220 (PERTH); 21.1 km S of Pingrup turnoff on Newdegate-Lake Magenta road, *M.H. Simmons* 1343 (PERTH).

Distribution. Extends from between Jibberding and Whitewells homesteads (*c.* 50-70 km northeast of Dalwallinu) south to near Lake Grace and east to Coolgardie, common in the Coorow to Wongan Hills region, southwest Western Australia. One collection, *B.R. Maslin* 5801 from 18 km east of the Norseman-Esperance road on Quast Road about 27 km NNE of Salmon Gums (PERTH), is far southeast of the main range of the subspecies and indicates a considerably wider distribution.

Habitat. Mostly in saline situations around salt marshes, flats and lakes; occasionally in rocky clay on hills or in sandy loam near saline areas.

Flowering and fruiting periods. Flowers from August to October with the main flush apparently in September; pods with mature seeds have been collected in January.

Conservation status. Not known to be under threat.

Etymology. The name is chosen to refer to the expanded, flattened phyllodes of this taxon, from *explicatus*, Latin for spread out or expanded.

2. Acacia inceana Domin, Vestn. Kral. Ceske Spolecn. Nauk, Tr. Mat.-Prir. 2: 43 (1923) *Typus*: Western Australia, *W.H. Ince* (*holo*: K; *iso*: NSW, PR 527977-fragment ex K).

A. inceae Maiden & Blakely, J. Roy. Soc. Western Australia 13: 8, pl. 5, figs 7-10 (1928), synon. nov. *Typus*: Western Australia, *W.H. Ince* (*holo*: K; *iso*: NSW, PR 527977-fragment ex K).

Shrubs 1-3 m tall. *Bark* grey, smooth or rough at base. *Stipules* caducous, small indistinct. *Branchlets* terete, glabrous or appressed-puberulous, glabrescent. *Phyllodes* terete to flat, 4-8.5 cm long, *c.* 1-1.5 mm diam. or to 2 mm wide when flat, rather rigid, ascending to erect, straight or slightly curved, glabrous or appressed-puberulous at first, glabrescent except pulvinus, bright- to olive-green; apex fine, curved or rarely straight, brown, innocuous to ± pungent; nerves numerous, fine, closely parallel, indistinct; stomata sometimes raised; glands 1 or 2, lowest one 10-15 mm above pulvinus. *Peduncles* 2 per axil, 3-6 mm long, glabrous; heads globular, 3.5-4 mm diam., 10-30-flowered. *Flowers* 4-merous. *Sepals* 1/2 petal-length, free, narrowly oblong to ± spathulate or linear-spathulate. *Pods* linear, slightly raised over but not constricted between seeds, 4-8.5 cm long, 3-4 mm wide, thinly coriaceous, straight, glabrous, tan or pale dull brown. *Seeds* (subsp. *conformis*) longitudinally arranged in pods, oblong, 4.5-6 mm long, 2-2.5 mm wide, sub-glossy, dark brown, the aril terminal, white.

Distribution. Occurs from near Morawa southeast to Hines Hill (*c.* 20 km southwest of Merredin on Great Eastern Highway) and east to the Kalgoorlie area, southwest Western Australia.

Typification. Both Domin's name and that of Maiden & Blakely were based on the same collection at Kew; Domin obtained a fragment during a visit to Kew and Maiden received the collection later on loan for naming. Thus the main collection is at Kew with fragments at Prague and Sydney.

Affinities. The species is morphologically similar to *A. enervia* Maiden & Blakely (see above) which has pentamerous flowers and phyllodes with a single gland at the base of the blade (or gland absent). From the limited material available, it appears that the pods differ in width between the two species, wider in *A. inceana*. It comprises two subspecies.

2a. Acacia inceana Domin subsp. **inceana**

Phyllodes terete, the tip curved or sometimes straight, pungent to coarsely pungent, 4-8.5 cm long, glabrous; *peduncles* 3-5 mm long; heads 20-30-flowered; *sepals* narrowly oblong; *pods* 8-8.5 cm long, tan; *seeds* not seen.

Selected specimens examined. WESTERN AUSTRALIA: Binneringie Station, *J.S. Beard* 6273 (PERTH); 18 km N of Kalgoorlie on road to Menzies, *B.R. Maslin* 6019 (PERTH); Bulong, 20 miles [32 km] E of Kalgoorlie, *B. Severne* 8744 (PERTH); 3.8 km N on Yarri Battery road from Yindi junction [*c.* 30 km NNE of Kalgoorlie], *M.H. Simmons* 1179 (PERTH).

Distribution. All known collections are from north and east of Kalgoorlie within a 35 km radius, excluding one from Binneringie Station, *c.* 100 km southeast of Kalgoorlie.

Habitat. On red soil with scattered eucalypts and low semi-dense shrub association, rarely in saline habitats.

Flowering and fruiting periods. Flowers in August-September; pods with mature seeds not seen.

Affinities. This subspecies is quite similar to subsp. *conformis* which differs by its sub-terete to flat phyllodes, fewer flowers per head and pale dull brown pods, as well as by its habitat preference and distribution. There is also a strong superficial resemblance to *A. kalgoorliensis* R.S. Cowan & Maslin (see above under "*A. densiflora* Group") from the same general region but that species has branchlets with sub-appressed, white hairs and intermixed red resin-hairs, phyllodes with about 20 slightly raised nerves, between which raised stomata are clearly evident, and 5-merous flowers.

Discussion. It must be noted that Maiden described the species as 5-merous but all the material seen by us has predominantly 4-merous flowers, 5-merous ones rarely being found among the 4-merous ones.

Conservation status. Not known to be threatened.

2b. Acacia inceana subsp. **conformis** R.S. Cowan & *Maslin*, subsp. nov.

Phyllodia sub-teretia ad plana, apice innocuo, curvato, 4-7 cm longa, 1-2 mm lata, initio appresso-puberula glabrescentia praeter pulvinum puberulum; *pedunculi* 5-6 mm longi, capitulis 10-15-floribus, *sepalis* plus minusve spathulatis; *legumina* 4-7 cm longa.

Typus: between Morawa and Perenjori [precise locality details withheld for conservation reasons], Western Australia, 31 August 1982, *R.J. Cumming* 2199 (*holo*: PERTH 00191043; *iso*: CANB, K).

Phyllodes sub-terete to flat, 4-7 cm long, 1-2 mm wide, at first appressed-puberulous but glabrescent except for pulvinus; tip curved, ± innocuous, *peduncles* 5-6 mm long, bearing 10-15-flowered heads; *sepals* more or less spathulate; *pods* 4-7 cm long, pale dull brown.

Selected specimens examined. WESTERN AUSTRALIA: [precise localities withheld for conservation reasons], N of Kalannie, *G. Craig* 1600 (NY, PERTH) and 1632A (NSW, PERTH); NE of Kulja, *G. Craig* 1622 (MEL, PERTH); between Mukinbudin and Bencubbin, *B.R. Maslin* for *R.J. Cumming* 2303 (MELU, PERTH); between Hines Hill and Nungarin, *B.R. Maslin* 2339 (PERTH) and 2339A (CANB, K, PERTH); Cowcowing, *F. Stoward* 311 (PERTH).

Distribution. Extends from near Morawa southeast to Hines Hill and east to Boorabbin (*c.* 90 km west of Coolgardie on Great Eastern Highway), southwest Western Australia.

Habitat. A highly salt-tolerant species on alkaline dark red-brown, coarse clay-sand overlying yellow-brown coarse clay-sand or sandy loam at margins of salt pans or lakes.

Flowering and fruiting periods. Flowers in August-September; pods with mature seed have been collected from September to December.

Conservation status. A Priority 1 taxon in the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The epithet is chosen in allusion to the similar appearance of this taxon to *A. enervia* subsp. *explicata*, which differs in having 5-merous flowers, from *conformis*, Latin for similar.

3. Acacia lineolata Benth., Linnaea 26: 626 (1855)

Lectotype (here selected): Swan River [Western Australia], 1848, *J. Drummond* 4: 13 (K, Herb. Hooker; *isolecto*: G, K-Herb. Bentham, OXF, P, PERTH 00886378-fragment ex K, TCD). *Paralectotype*: Swan River [Western Australia], *J. Drummond* 4: 12 (K, Herb. Hooker and Herb. Bentham, mounted with *lectotype* and *isolectotype*, see discussion below); we are unable to apply a name to this specimen, but it is not *A. lineolata, sensu lectotypico.*

Dense, rounded or obconic *shrubs* 0.5-1.7 m tall with dense or bushy crown to 3 m diam. *Bark* grey, smooth, sometimes fissured at base. *Branchlets* somewhat angled at apex, glabrous or appressed-puberulous with the angles glabrous. New growth citron-silvery or silvery grey sericeous. *Stipules* persistent, triangular, less than 1 mm long. *Phyllodes* linear to linear-oblanceolate to oblong-elliptic, usually flat, 2-6.5(7.5) cm long, (1)2-5 mm wide, coriaceous to rigid-coriaceous, patent to ascending, straight to somewhat incurved or sigmoidally curved, glabrous or appressed-puberulous when young and glabrescent, olive-green or dull dark-green; apex straight or more or less curved, acute to short-acuminate, innocuous to pungent; nerves numerous, closely parallel, clearly evident and yellow (at least in dry state), immersed to raised, the inter-nerve spaces darker coloured and clearly marked by rows of distinct, sometimes raised stomata, anastomoses absent or occasional; gland(s) 1-3, small, inconspicuous, on adaxial margin, the lowermost (3)5-21 mm above pulvinus. *Peduncles* (1)2 per axil, 2-11 mm long, glabrous to more or less appressed-puberulous; basal peduncular bracts caducous, cucullate; heads globular or slightly oblongoid, golden, 4-6 mm diam., 18-35-flowered; bracteoles linear to fusiform, ciliolate. *Flowers* 5-merous. *Sepals* 1/4-2/3 as long as petals, free or up to 1/2-united. *Petals* free or to 1/2-united. *Ovary* puberulous, appressed-puberulous or papillate-puberulous. *Pods* linear, raised over and slightly constricted between seeds, to 10 cm long and 2-3 *mm* wide, thinly coriaceous or chartaceous, straight to shallowly curved, somewhat appressed-puberulous between seeds or glabrous. *Seeds* longitudinally arranged in pods, elliptic, oblong-elliptic or oblong, 3-4 mm long, 1.2-2 mm wide, compressed or turgid, glossy, brown or brown-black; pleurogram U-shaped; areole about 1/4-1/3 as long as seed, paler brown; the aril terminal, 1/3-2/3 as long as seed, conical, bright yellow.

Distribution. Occurs in southwest Western Australia from Yuna (*c.* 35 km east of Northampton) south to Pingrup.

Typification. There are two sheets at Herb. K bearing type material, one stamped "Herbarium Hookerianum", the other "Herbarium Benthamianum": both have branchlets of two different collections, namely, *Drummond* 4: 12 and 4: 13. On the first of these sheets the correct collection number is assigned for each of the two elements, as shown by duplicates mounted separately at G, OXF, and P. The collection numbers are reversed on the Herb. Bentham sheet, hence the choice of the specimen of *Drummond* 4: 13 on the Herb. Hooker sheet as lectotype. The other collection (paralectotype) has not been identified; it is not this taxon, although it is superficially similar.

Affinities. Similar to *A. enervia* Maiden & Blakely (see above for discussion).

Infraspecific taxa. Comprising two subspecies with the typical one differing from subsp. *multilineata* in having proportionately much longer than wide, often sigmoidally curved phyllodes with the apex recurved.

3a. Acacia lineolata Benth. subsp. **lineolata**

Phyllodes linear to linear-oblanceolate, occasionally ± terete, 2-5(7.5) cm long, (1)2-4 mm wide, *c.* 20 times longer than wide, more or less curved, often sigmoidally; apex curved-acute and not at all pungent or rigid. *Peduncles* 2-6 mm long. *Sepals* free or to half-united. *Seeds* glossy brown-black.

Selected specimens examined. WESTERN AUSTRALIA: between Pithara and Miling, *W.E. Blackall* 2893 (PERTH); Pingrup, *W.E. Blackall* 2987 (PERTH); 11 miles [17.6 km] N of Dandaragan, *W.E. Blackall* 3671 (PERTH); 0.7 km S of Tammin on road to Gardner Reserve, *R.S. Cowan* A744 and *B.R. Maslin* (PERTH); 14.1 km from junction of Gorge road with Ajana-Kalbarri road, Kalbarri National Park, *R.S. Cowan* A-821 and *R.A. Cowan* (PERTH); east of Coblinine River crossing on Warren Road (east of Katanning), *G. Craig* 1586 (PERTH); 7 km S of Miling on Lyons East Road, *G. Craig* 1590 (PERTH); 41.6 km from Brand Highway towards Coorow, *R.J. Cumming* 1319 (PERTH); Wilroy, *J. Galbraith* 347 (PERTH); 12 miles [19.2 km] E of Katanning on road to Nyabing, *B.R. Maslin* 784 (MEL, PERTH); 32 km W of Kununoppin towards Wyalkatchem, *B.R. Maslin* 3400 (CANB, K, NSW, P, PERTH); 14 km E of Kulja towards Beacon, *B.R. Maslin* 3975 (CANB, K, MEL, NSW, PERTH); about 2 km W of the Wongan Hills on road to Piawaning, *B.R. Maslin* 5369 (NY, PERTH); 27 km due NNW of Goomalling, Mortlake River North, *B.R. Maslin* 6200 (BM, BRI, PERTH); 3 miles [4.8 km] N of Brookton, *K. Newbey* 891 (PERTH).

Distribution. Occurs from Kalbarri National Park (*c.* 100 km north of Geraldton) southeast to near Katanning and Pingrup (*c.* 50 km north of Ongerup), southwest Western Australia.

Habitat. In sandy or stony, often saline, loam in association with *Casuarina* spp. and *Halosarcia* spp. or in eucalypt woodland.

Flowering and fruiting periods. Flowers in August-September; pods and mature seeds have been collected in late November.

Variant. In the north-central part of the range from Yuna south to Yorkrakine (*c.* 25 km due southeast of Wyalkatchem) and east to Kulja (*c.* 45 km due north-northwest of Koorda), a form with narrow phyllodes (1-1.5 mm wide) occurs, some so narrow as to appear more or less terete, e.g. *B.R. Maslin* 3975 (CANB, K, MEL, NSW, PERTH) and 6200 (BM, BRI, PERTH).

Conservation status. Not under threat.

3b. Acacia lineolata subsp. **multilineata** (W. Fitzg.) R.S. Cowan & Maslin, comb. et stat. nov.

A. multilineata W. Fitzg., J. Western Australian Nat. Hist. Soc. 1: 13 (1904). *Lectotype*: Arrino, Western Australia, September 1903, *W.V. Fitzgerald s.n.* (NSW 216915, left-hand specimen on sheet, *fide* Maslin & Cowan 1994a; *isolecto*: NSW 216915 (right hand specimen), PERTH 00765813, 00765791 (ex herb. *C.A. Gardner* no. 1306B), 00765805 (Fragment, presumably ex herb. *W.E. Blackall*).

Phyllodes oblong-oblanceolate to oblong-elliptic, acute to short-acuminate, 3-6.5 cm long, 3-5 mm wide, 10-13 times longer than wide, rigid-coriaceous, straight to incurved; apical point straight and coarsely to sharply pungent. *Peduncles* 5-11 mm long. *Sepals* always free. *Seeds* glossy, brown.

Selected specimens examined. WESTERN AUSTRALIA: Mullewa area [precise localities withheld for conservation reasons], *A.M. Ashby* 1571 (PERTH), 4515 (PERTH), 4516 (CANB, PERTH), 4645 (PERTH) and 4646 (PERTH), *G. Phillips* GP42 (PERTH), *B.R. Maslin* 3637 (K, MEL, PERTH) and 5077 (PERTH); near Arrino, *B.R. Maslin* 6588 (PERTH).

Distribution. In addition to the type, which was collected from Arrino, the species is known only from a few localities in the vicinity of Mullewa, southwest Western Australia. The type locality is considerably south and west of most of the other collection localities but a recent collection confirms the continued presence of the species there (*B.R. Maslin* 6588).

Habitat. On sandplains and on rocky clay.

Flowering and fruiting periods. Flowers from June to August; pods with mature seeds have been collected in November and December.

Affinities. Subspecies *multilineata* bears a superficial resemblance to *A. patagiata* R.S. Cowan & Maslin (which has very different phyllode nervature) and *A. unguicula* R.S. Cowan & Maslin (which has spinose stipules), see Cowan & Maslin (1990) for description of these two species.

Conservation status. A Priority 1 on the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

The "*Acacia fragilis* Group"

The species of this informal grouping have few characters in common: sub-terete to terete phyllodes with a gland in the basal one-third of the blade; 5-merous flowers with free sepals; and linear, compressed pods. Some of the previously described taxa are re-described here in an attempt to clarify the past confusion regarding their identity. The taxa comprising this "Group" include the following: *A. assimilis* S. Moore subsp. *assimilis*, *A. assimilis* subsp. *atroviridis* R.S. Cowan & Maslin subsp. nov., *A. aulacophylla* R.S. Cowan & Maslin sp. nov., *A. consanguinea* R.S. Cowan & Maslin sp. nov., *A. fragilis* Maiden & Blakely, *A. ophiolithica* R.S. Cowan & Maslin sp. nov. and *A. uncinella* Benth.

Key to taxa of "*A. fragilis* Group"

(*Acacia triptycha* is not a member of the Group as defined above, but is included in this key because of its superficial similarity to *A. assimilis* subsp. *atroviridis*.)

1. Phyllodes flat (apppearing sub-terete when very narrow) with three longitudinal nerves on each face ..... *A. triptycha*
1. Phyllodes terete

2. Phyllodes with numerous (>8), closely parallel nerves
  3. Phyllodes commonly light green, mostly 50-95 mm long; pulvinus slender, cylindric, not flared towards base; heads mostly 30-40-flowered ..... 1a. *A. assimilis* subsp. *assimilis*
  3. Phyllodes dark green, mostly 80-140 mm long; pulvinus flared towards its base, often strongly compressed dorsi-ventrally (adaxial or abaxial view); heads mostly 50-70-flowered ..... 1b. *A. assimilis* subsp. *atroviridis*
2. Phyllodes 4- or 8-nerved, the nerves sometimes obscure
  4. Phyllodes (6)7.5-12(16.5) cm long, deeply sulcate between the 8 strongly raised nerves ..... 2. *A. aulacophylla*
  4. Phyllodes shorter and/or not deeply sulcate
    5. Pulvinus flared at its base, appressed-puberulous on its upper surface; bracteoles acute; phyllodes mostly 25-43 mm long (rarely to 70 mm) with glabrous apical points; heads mostly 20-25-flowered ..... 3. *A. consanguinea*
    5. Pulvinus ± terete, glabrous (except occasionally hairy in *A. uncinella*); bracteoles rounded
      6. Heads 10-15-flowered on very slender peduncles (5)7-13 mm long; phyllodes mostly 25-36 mm long, nerves scarcely discernible, apical point minute and glabrous ..... 5. *A. ophiolithica*
      6. Heads 16-31-flowered on peduncles 4-6 mm long; phyllodes with discernible nerves (x10 mag.) and distinct apical points
        7. Phyllodes 3.5-7(8) cm long, the apex drawn out in a delicate, curved, long-acuminate (mostly 2-6 mm), normally persistently hairy tip ..... 4. *A. fragilis*
        7. Phyllodes 1-3.5 cm long, the apex not as above (i.e. shorter and/or glabrous) ..... 6. *A. uncinella*

1. Acacia assimilis S. Moore, J. Linn. Soc., Bot. 45: 172 (1920)

Lectotype (here selected): Bruce Rock, Western Australia, 1915, *F. Stoward* 116, BM; *isolecto*: BM, PERTH 00741477-fragment ex BM. *Paralectotype*: Cowcowing, Western Australia, 1916, *F. Stoward* 405 (BM, PERTH 00741485 and 00741469).

Low, rounded, dense, spreading *shrubs* or small trees (0.5)1-2.5(4) m tall. *Bark* on main stems grey, brown or grey-brown, fissured at base, smooth above. *Branchlets* terete, light brown, red, grey-red or red-brown, glabrous. New shoots densely yellow pubescent, the hairs appressed. *Stipules* caducous, scarious-chartaceous, narrowly oblong. *Phyllodes* terete, filiform, (40)50-140(175) mm long, (0.7)0.8-1.3 mm diam., patent or ascending to occasionally erect, straight to gently curving, light to dark green, glabrous (except apex); apex delicately curved, caudate-acuminate, ± plumose or appressed-puberulous and glabrescent; pulvinus cylindric or flaring towards base, 1-2.5(3.5) mm long; nerves numerous, closely parallel, slightly raised and frequently lighter green than inter-nerve spaces; gland single, 2-24(30) mm above pulvinus, widely elliptic, depressed. *Peduncles* 2 per axil, (3)6-11(14) mm long, hoary appressed-puberulous or glabrous; basal peduncular bract broadly

rounded, glabrous to slightly appressed-puberulous laterally; heads globular to widely ellipsoid or obloid, bright to dull golden or lemon-yellow, 4-5(6) mm diam., (17)30-70(80)-flowered; bracteoles spathulate, the stipe long and slender, the blade rounded, somewhat concave, ciliate, sometimes dark-coloured, the apex sometimes obviously exserted in bud. *Flowers* normally 5-merous, rarely a few 4-merous interspersed. *Sepals* about 1/2 length of petals, free or very shortly united basally, spathulate to linear-spathulate, the blade rounded, ciliolate, the stipe elongate, narrow. *Petals* 1/2-3/4-united, rarely free, oblanceolate. *Ovary* appressed-puberulous or papillose-puberulous. *Pods* linear, raised over seeds and slightly or not at all constricted between them, 30-85 mm long, 3-4 mm wide, papery, straight, glabrous or with scattered, appressed hairlets, rather shiny. *Seeds* longitudinally arranged in pods, widely elliptic to ovate or oblong-elliptic, unilaterally constricted apically, 2.5-3 mm long, 1.5-1.8 mm wide, dull, dark-brown to black; pleurogram semicircular or U-shaped; areole tiny; the aril sub-terminal.

Distribution. The species is widespread and common from Mullewa southeast to Boxwood Hill and the Norseman-Scaddan area of southwest Western Australia. The southern end of that range is occupied almost exclusively by subsp. *atroviridis.* The geographic ranges of the two subspecies are contiguous in the Lake King-Newdegate (east of Lake Grace) and Salmon Gums-Norseman areas (south of Norseman). One collection (*B.R. Maslin* 2447 from 1.5 km N of Salmon Gums, PERTH) has intermediate characteristics, suggesting possible hybridization between the two subspecies. Two further PERTH collections of the typical subspecies (*N.N. Donner* 1392 from *c.* 28 km southwest of Nannup and *W.E. Blackall s.n.* from the Darling Range, 32 km from Dwellingup) are considerably southwest and west respectively of the range of the species and are possibly incorrectly labelled with respect to locality or they may represent cultivated specimens.

Typification. The protologue lists two collections representing the same taxon, *F. Stoward* 116 from Bruce Rock and 405 from Cowcowing; material of both collections appear on the type sheet at BM and we have designated the specimen nearest the left side of the sheet as lectotype (no. 116). There are three other branchlets of what is presumably also *Stoward* 116 in the middle of the sheet and one other branchlet on the right, separated by pencil lines, of *Stoward* 405, which we regard as a paralectotype.

Affinities. This species and *A. fragilis* Maiden & Blakely are superficially similar but *A. assimilis* has generally longer phyllodes with at least twice as many nerves. In addition, they differ in the union of the perianth parts: *A. fragilis* has free petals and sepals, whereas the petals in *A. assimilis* are normally half or more united. *Acacia aulacophylla* R.S. Cowan & Maslin (see below) is also closely related but differs markedly in the eight strongly raised nerves of its phyllodes.

Infraspecific taxa. The species comprises two subspecies which differ primarily in phyllode colour and length, the form of the pulvinus and the number of flowers per head.

1a. Acacia assimilis S. Moore subsp. **assimilis**

Phyllodes (40)50-95(150) mm long, (0.7)0.8-1(1.3) mm diam., commonly light or bright green; pulvinus slender, about the diameter of the phyllode base (viewed abaxially or adaxially), cylindric, not flaring basally. Heads (17)30-40(44)-flowered; bracteoles dark with at least the apex well-exserted. *Sepals* more than 1/2 as long as the 1/2-2/3-united petals.

Selected specimens examined. WESTERN AUSTRALIA: 6 miles [9.6 km] N of Muntadgin, *E.T. Bailey* 288 (PERTH); about 10 km W of Three Springs, 28 August 1972, *C.Chapman s.n.* (K, PERTH 00689254); 10 miles [16 km] E of Mullewa, *R.J. Cumming* 1934 (BRI, MEL, NSW, PERTH);

Bendering, *C.A. Gardner* 9461 (CANB, G, NY, PERTH); 8.7 km N from Southern Cross towards Bullfinch, *N. Hall* H76/45 (PERTH); Wongan Hills, 16 August 1925, *E.H. Ising s.n.* (PERTH 00689203); 8 km due SSW of Bencubbin, *B.R. Maslin* 2001 (PERTH); 6.5 miles [10.4 km] S of Merredin towards Bruce Rock, *B.R. Maslin* 2299 (AD, BRI, CANB, K, MEL, PERTH); 4 km N of Daniell Siding, Norseman-Salmon Gums road, *B.R. Maslin* 2464 (MEL, PERTH); 10 miles [16 km] W of Moorine Rock, Great Eastern Highway, *B.R. Maslin* 3201 (AD, NSW, PERTH); 7 km N of Tammin towards Korrelocking, *B.R. Maslin* 4420 (PERTH); 2.5 km W of Kulja towards Burakin, *B.R. Maslin* 4445 (MEL, PERTH, TLF); 6 miles [9.6 km] N of Lake Biddy, *K. Newbey* 1050 (PERTH); 8 miles [12.8 km] NE of Hyden, *K. Newbey* 1067 (PERTH); 4 km SSW of McDermid Rock, *K. Newbey* 5281 (PERTH); Mount Gibbs, *K. Newbey* 5486 (PERTH); Stennet Rock, c. 48 km SSW of Norseman, *K. Newbey* 7679 (PERTH); Wallaroo Rock, *c.* 72 km WNW of Coolgardie, *K. Newbey* 8830 (PERTH); 22.5 km W of Paynes Find, *R.A. Saffrey* 854 (MEL, PERTH, TLF); 1 miles [1.6 km] SW of Manmanning, *B.H. Smith* 385 (AD, BRI, CBG, NSW, PERTH).

Distribution. Common from Mullewa south-southeast to near Lake Biddy (which is *c.* 45 km northeast of Lake Grace) and east to near Norseman and Coolgardie. Two distributionally anomalous specimens are referred to above in the discussion of distribution.

Habitat. Grows in sand, sandy or gravelly loam often in association with granite, less frequently in laterite, in mallee heath and scrub on wet, low-lying areas on hillocks and mountain slopes and open sandplains.

Flowering and fruiting periods. Flowers from July to October; pods with mature seeds have been collected in December and January.

Conservation status. Widespread and not under threat.

1b. Acacia assimilis subsp. **atroviridis** R.S. Cowan & Maslin, subsp. nov.

A subsp. *assimilis phyllodiis* (60)80-140(175) mm longis, 1-1.5 mm diametro, aeque atroviridibus, pulvino versus basem dilato, saepe valde dorsi-ventraliter compresso (adaxialiter vel abaxialiter visus); capitula cum 50-70(80) floribus, bracteolis non exsertis differt.

Typus: 83.9 miles [135 km] from Albany on Borden-Pingrup road, Western Australia, 25 May 1973, *A.M. Ashby* 4724 (*holo*: PERTH 00686670; *iso*: BRI, CANB, K, MEL, NSW, NY, PERTH 00688789).

Phyllodes (60)80-140(175) mm long, 1-1.5 mm diam., drying uniformly dark-green, the pulvinus flared towards its base, often strongly compressed dorsi-ventrally (adaxial or abaxial view). Heads 50-70(80)-flowered; bracteoles neither dark-coloured nor obviously exserted. *Sepals* half or less as long as 2/3-3/4-united petals.

Selected specimens examined. WESTERN AUSTRALIA: 30 km W of 90 Mile Tank, *T.E.H. Aplin* and *M.E. Trudgen* 5917 (K, PERTH); 88 miles [141 km] from Albany on Borden-Pingrup road [*c.* 20 km N of Borden], *A.M. Ashby* 4733 (B, BM, MEL, NY, PERTH, W); 28 km due E of Lake King Gate on Rabbit Proof Fence, 33° 04' 30"S, 120° 19' E, *K. Bradby* 39 (PERTH); 32 km ESE of Muckinwobert Rock on West Point Road, 33° 28'S, 120° 37'E, *M.A. Burgman* 1050 and *S. McNee* (PERTH); Boxwood Hill-Toompup road, 11 km NW from Chillilup Pool turnoff, 34° 17'S, 118° 31'E, *M.D. Crisp* 5163 (PERTH); Fitzgerald River, *C.A. Gardner* 9259 (PERTH); Oldfield Location 1002, near Dallinup

Creek, 33° 34'S, 120° 40'E, *A.S. George* 15723 (PERTH); Kumarl, *L.A. Horbury* 102 (PERTH); 2 km S of North Ironcap, 33° 24'S, 119° 41'E, *G.J. Keighery* 3782 (MO, PERTH); 10 km W of Munglinup, *B.R. Maslin* 2556 (AD, K, PERTH); 20 km S of Salmon Gums on Coolgardie-Esperance Highway, *B.R. Maslin* 5453 (CANB, PERTH); 6 miles [9.6 km] S of Lake Grace, *K. Newbey* 1623 (CANB, G, K, NSW, PERTH); Peak Eleanora, Peak Charles National Park, *K. Newbey* 6384 (PERTH); 6 km S of Mount Gibbs, Frank Hann National Park, *K. Newbey* 6544 (PERTH); Lake Varley-Holt Rock, May 1961, *R.P. Roberts s.n.* (PERTH 00689718); 10.9 miles [17.5 km] NE of Dumbleyung towards Kukerin, *M.D. Tindale* 165 and *B.R. Maslin* (PERTH); 11.3 km from Lake King towards Newdegate, *J.W. Wrigley* WA/68 5501 (PERTH).

Distribution. Common from near Dumbleyung south to near Boxwood Hill (*c.* 50 km south-southwest of Jerramungup) and east to Coolgardie-Esperance Highway in the Kumarl-Scaddan area, southwest Western Australia.

Habitat. Grows in sand, sandy or gravelly loam, often in association with granite, less commonly with laterite in scrub, woodland and heath.

Flowering and fruiting periods. Flowers throughout the year; pods with mature seeds have been collected in November and December. Developing pods may occur on plants that are also in flower.

Affinities. Differences between the subspecies are discussed under the species. Subspecies *atroviridis* is quite similar to *A. triptycha* F. Muell. ex Benth. in appearance and even in details of flower morphology, including form of bracts and bracteoles. They differ in that the phyllodes of *A. triptycha* are flat, 8-nerved (3 nerves per face), rather than being terete and multinerved. Geographically, they occur in similar areas, so there is a real possibility of misidentifying collections of both taxa.

Conservation status. Widespread and not under threat.

Etymology. The colour of the dried phyllodes suggested the name for this taxon, from two Latin words, *atratus* meaning dark, and *viridis,* a word for green.

2. Acacia aulacophylla R.S. Cowan & Maslin, sp. nov.

Frutex 1-4 m altus, saepe rotundatus, ramulis teretibus, glabris. *Phyllodia* teretia, arcuate longo-acuminata, appresso- vel sub-appresso-puberula, interdum partim glabrescentia, pulvino gracili, 2-4 mm longo, laminis (60)75-120(165) mm longis, 1(1.5) mm diametro, semi-rigidis, ascendentibus ad erectis, glabris, diluto- vel medio-viridibus, 8 nervis valdissime elevatis, *glande* distincta, 2-15 mm supra pulvinum, circulari vel lato-elliptica. *Pedunculi* 1 vel 2 in quoque axilla, (4)5-8(10) mm longi, raro longiores, appresso-puberuli, pedunculorum bractea basali caduca, late ovata, cucullata, ciliata, appresso-puberula vel glabra. Capitula globularia, lutea, 5-6 mm diametro, 40-87-floribus, dense congesta, bracteolis spathulatis ad sub-peltatis, puberulis, ciliatis. *Flores* 5-meri, *sepalis* petalarum circa dimidiis longitudinis, discretis, spathulatis, ciliatis, *petalis* 1/2-3/4-connatis. *Legumina* linearia, non constricta, 60-100 mm longa, 5-6 mm lata, pendula, coriacea, recta, glabra, nervis marginalibus distinctis, pallidis. *Semina* longitudinalia, late elliptica, compressa, 4.5 mm longa, 2.5 mm lata, circum axem longitudinalem cristata, obscure nigra, arillo sub-terminali.

Typus: 1.6 km N of Cue towards Meekatharra, Western Australia, 30 July 1974, *B.R. Maslin* 3594 (*holo*: PERTH 00187275; *iso*: CANB, K, MEL, NY).

Often rounded *shrubs* 1-4 m tall, bushy but becoming openly branched with age, single-stemmed or branched at ground level. *Bark* grey, smooth throughout or fissured only at base of main stems. *Branchlets* terete, glabrous, red-brown ageing grey. New shoots often golden appressed-puberulous. *Stipules* only on very young branchlets, lanceolate-oblong, 1.5-2 mm long, 0.6-1 mm wide, scarious, appressed-puberulous. *Phyllodes* terete, (60)75-120(165) mm long, 1(1.5) mm diam., semi-rigid, ascending to erect, straight, glabrous, light to medium green; apex long-acuminate, the delicate tip arcuate, appressed to subappressed-puberulous and sometimes partly glabrescent; pulvinus slender, 2-4 mm long; nerves 8, very strongly raised and deeply sulcate between; gland distinct, 2-15 mm above pulvinus, circular or widely elliptic. *Peduncles* 1 or 2 per axil, (4)5-8(10) mm long, rarely longer, appressed-puberulous; basal peduncular bract caducous, broadly ovate, cucullate, ciliate, appressed-puberulous or glabrous; heads globular, golden, 5-6 mm diam., 40-87-flowered, densely congested; bracteoles spathulate to subpeltate, puberulous, ciliate. *Flowers* 5-merous. *Sepals* about half as long as petals, free, spathulate, ciliate. *Petals* 1/2-3/4-united. *Ovary* densely appressed-puberulous. *Pods* linear, not strongly raised over nor constricted between seeds, 60-100 mm long, 5-6 mm wide, pendulous, coriaceous, straight, glabrous, the marginal nerves distinct, light-coloured. *Seeds* longitudinally arranged in pods, widely elliptic, compressed, 4.5 mm long, 2.5 mm wide, crested around long axis, dull, black; pleurogram crescent-shaped; the aril sub-terminal.

Selected specimens examined. WESTERN AUSTRALIA: Watheroo, August 1903, *C. Andrews s.n.* (PERTH 00187283); Mary Spring, Kalbarri National Park boundary, *D.R. Bellairs* 1609 (MEL, PERTH); East Yuna Reserve, NE of Geraldton, *A.C.Burns* 9 (PERTH); No. 8 Tank, Tching Range, Nookawarra Station, *R.J. Cranfield* 5187 (G, PERTH); 1.5 km S of Jingemarra Homestead, *R.J. Cranfield* 5255 (PERTH); 31.3 miles [50.1 km] S of Yalgoo towards Paynes Find, *R. Cumming* 1993 (AD, NSW, PERTH); 6 miles [9.6 km] E of Morawa, *J.R. Knox* 650813 (PERTH); about 6.5 km N of Mount Magnet towards Cue, *B.R. Maslin* 3582 (PERTH); Gnows Nest Range, 50 km SE of Yalgoo towards Paynes Find, *B.R. Maslin* 4254 (NY, PERTH); 5 km E of Mullewa on road to Yalgoo, *B.R. Maslin* 5075 (PERTH); 41 km from Byro Homestead on the track to Milly Milly Station, *B.R. Maslin* 5175 (BM, MO, PERTH); Donkey Paddock, Coodardy Station, *A.A. Mitchell* 759 (PERTH); 9 miles [14.4 km] N of Madoonga Homestead, *N.H. Speck* 1072 (BRI, DNA, NSW, PERTH).

Distribution. Found from Byro Station (*c.* 250 km west-northwest of Meekatharra) south to Mullewa and Morawa and extending inland to Cue (*c.* 65 km north of Mount Magnet), Western Australia. Two collections were made slightly outside this distribution at Mary Spring, *c.* 120 km northwest of Mullewa and at Watheroo, *c.* 120 km south of Morawa.

Habitat. On laterite or granite hills, outcrops and breakaways on sand, rocky sand, clay or loam in open scrub, often dominated by *Acacia* species. The occurrence of this species on hilltops and breakaways may in large part account for its discontinuous distribution.

Flowering and fruiting periods. Flowers mostly from April to August but one collection (*B.R. Maslin* 5075), with mature flowers and fruit, was made in December; pods with mature seeds have been collected in December.

Affinities. The deeply furrowed phyllodes with strongly raised nerves, distinguish *A. aulacophylla* from all its relatives, of which *A. assimilis* is perhaps closest, in spite of the difference in number of nerves in the phyllodes; superficially the two taxa can easily be confused. *Acacia acuminata* subsp. *burkittii* (F. Muell. ex Benth.) Tindale & Kodela (ms) which is common in the geographic range of the new species has a similar habit and foliage colour but is readily distinguished by its spicate inflorescences and ± moniliform pods which are 4-7 mm wide.

Conservation status. Not threatened.

Etymology. The furrowed phyllodes provide the basis for the specific epithet, from two latinized Greek words, *aulakos*, with the meaning of a furrow and *phyllon* for leaf.

3. Acacia consanguinea R.S. Cowan & Maslin, sp. nov.

Frutex multicaulis 0.4-1.5 m altus, cortice laevi, cinerea, ramulis teretibus, appresso-puberulis, cinereis. *Phyllodia* teretia, apice arcuato, mucronato, glabro, pulvino ad paginam adaxilem appresso-puberulo et ad basem dilato, laevi ad leviter transversaliter corrugato, (20)25-43(70) mm longa, (1)1.2-1.5(1.7) mm diametro, rigida, patentia ad ascendentia, vulgo leviter incurvata sed interdum recta vel leviter sigmoide arcuata, 8-nervata, nervis planis sed plerumque valde elevatis in sicco, glande minuta (4)6-10(13) mm supra pulvinum. *Pedunculi* 2 in quoque axilla, 3-6(8) mm longi, plus minusve appresso-puberuli vel plerumque glabri; capitula globularia, 4-5 mm diametro et (14)20-25(29)-floribus, bracteolis in alabastro exsertis, oblanceolato-spathulatis, puberulis et ciliatis, lamina plus minusve elliptica, acuta. *Flores* pentameri, *sepalis petalis*que discretis. *Legumina* linearia, supra semina alternatim valde elevata, inter semina leviter constricta, 30-60 mm longa, 2.5-3 mm lata, leviter curvata et undulata, tenuiter chartacea, glabra, lucida. *Semina* longitudinalia, late elliptica, 2-2.2 mm longa, 1.5-1.8 mm lata, 1.5 mm crassitie, lucida, maculata cum maculis brunneis in diluto-griseo-brunneis, arillo sub-laterali, cristato.

Typus: 10 km NW of Bullabulling towards Caenyie Rock, Western Australia, 8 August 1971, *B.R. Maslin* 1890 (*holo:* PERTH 00342793; *iso:* CANB, G, K, NSW, NY).

Dense or openly branched, often rounded, spreading *shrubs* 0.4-1.5 m tall, much-branched at ground level. *Bark* grey, smooth. *Branchlets* terete, appressed-puberulous, grey. *Stipules* caducous. *Phyllodes* terete, (20)25-43(70) mm long, (1)1.2-1.5(1.7) mm diam., rigid, patent to ascending, commonly shallowly incurved, sometimes straight or shallowly sigmoid, glabrous, dark-green; apex curved, mucronate, glabrous; pulvinus 1.5-2 mm long, smooth to faintly transversely wrinkled, dilated at base and appressed-puberulous on adaxial surface; nerves 8, often obscure, plane, distant, in dry state often appearing raised and separated by deep, more or less irregular furrows; gland minute, often not visible, (4)6-10(13) mm above pulvinus, depressed, elliptic. *Peduncles* 2 per axil, 3-6(8) mm long, glabrous or occasionally sparsely appressed-puberulous; basal peduncular bract cucullate, rounded, minutely appressed-puberulous; heads globular, golden, 4-5 mm diam., (14)20-25(29)-flowered; bracteoles exserted, oblanceolate-spathulate, acute, puberulous, ciliate, the lamina more or less elliptic, acute. *Flowers* 5-merous. *Sepals* about half the petal length, free, linear-spathulate, ciliolate. *Petals* oblanceolate, free, rarely half-united, glabrous. *Ovary* micro-puberulous. *Pods* linear, strongly raised on alternating sides over seeds and moderately constricted between them, 30-60 mm long, 2.5-3 mm wide, thin-chartaceous, slightly curved and undulate, glabrous, glossy. *Seeds* longitudinally arranged in pods, widely elliptic, constricted near hilum, crested around long axis, 2-2.2 mm long, 1.5-1.8 mm wide, 1.5 mm thick, glossy, mottled darker brown on pale grey-brown; pleurogram semicircular; areole minute; aril sub-lateral, crested.

Selected specimens examined. WESTERN AUSTRALIA: Carrabin, *W.E. Blackall* 4024 (B, K, PERTH); 54.9 km from Coolgardie towards Southern Cross along Great Eastern Highway, *E.M. Canning* WA/68 2467 (PERTH); 16.7 km from Moorine Rock towards Perth along Great Eastern Highway, *E.M. Canning* WA/68 2552 (PERTH); Noongar, 31° 20'S, 118° 58'E, *R. Coveny* 8375 and *B. Haberley* (PERTH); 26 km SW of Bodallin, 31° 34'S, 118° 43'E, *R.J. Cranfield* 2456 (PERTH); 39.2 miles [62.8 km] W of Kumarl towards Lake King, *R. Cumming* 2556 (PERTH); 8 miles [13 km]

S of Bonnie Rock, *J. Goodwin* 87(1262) (PERTH); 25 km W of Bullabulling on Great Eastern Highway, *B.R. Maslin* 2413 (AD, CANB, K, MEL, NSW, NY, PERTH); 10 km by road S of Queen Victoria Rock, *B.R. Maslin* 5408 (PERTH); about 12 km N of Southern Cross on road to Bullfinch, *B.R. Maslin* 6711 (PERTH); 2 km S of Karalee, *c.* 50 km E of Southern Cross, *K. Newbey* 6032 (PERTH); 0.5 km E of Marvel Loch turn-off on Great Eastern Highway, *M.H. Simmons* 1204 (PERTH); Muntadgin, *T.W. Stone* and *E.T. Bailey* 816 (PERTH) and *T.W. Stone* 866 (PERTH); 12 miles [19.2 km] NW of Wialki, 4 October 1958, *G.M. Storr s.n.* (PERTH 00750158); Ghooli, 15 km E of Southern Cross along Great Eastern Highway, *A. Strid 20035* (AD, BRI, CANB, G, MEL, MO, NSW, PERTH).

Distribution. Locally common from Muntadgin (*c.* 40 km southeast of Merredin) east to near Coolgardie with most collections from along the Great Eastern Highway, southwest Western Australia. There are two outlying populations, the first represented by *G.M. Storr s.n.* (PERTH 00750158) from near Wialki (*c.* 150 km north-northwest of Muntadgin) and the second represented by *R. Cumming* 2556 (PERTH) from *c.* 63 km west of Kumarl (Kumarl is *c.* 200 km south of Coolgardie).

Habitat. Found on sand, sandy loam or sandy clay in heath or dense scrub.

Flowering and fruiting periods. Flowers mainly in September, occasionally August; pods with mature seeds have been collected in December.

Affinities. The new species is closely related to *A. fragilis* Maiden & Blakely and *A. uncinella* Benth. (see below) from both of which it differs in having the pulvinus appressed-puberulous on its adaxial surface and flared towards its base, gland minute, bracteoles acute and slightly exserted in the bud and seeds nearly rotund. The phyllode apex of *A. consanguinea* is more like *A. uncinella* in form and in being glabrous but the heads are larger as in *A. fragilis*. Flower morphology also links the new species more closely with *A. fragilis*; both have free sepals and petals in the vast majority of specimens examined. Geographically *A. fragilis* and *A. consanguinea* occur in more northern areas than does *A. uncinella*.

Conservation status. Not under threat.

Etymology. The close relationship of the species with other species of this alliance suggests the name, from *consanguineus*, Latin for kindred, related by blood.

4. Acacia fragilis Maiden & Blakely, J. Roy. Soc. Western Australia 13: 5, pl. 4, figs 1-11 (1928)

Based on *A. triptycha* var. *tenuis* Maiden, J. & Proc. Roy. Soc. New South Wales 53: 178 (1920). *Typus*: Tammin, Western Australia, September [*sphalm.* November in protologue] 1909, *J.H. Maiden s.n.* (*holo*: NSW; *iso*: K, NSW, PERTH 00963828 and 00859435-fragment ex NSW).

Dense, rounded *shrubs*, becoming more openly branched with age, 0.5-2.5 m tall, spreading 2.5-3 m across; stems to 10 cm diam. at base. *Bark* grey, finely fissured basally. *Branchlets* terete, glabrous, red-brown, becoming grey with separation of epidermis from lower layers. New shoots golden-sericeous. *Stipules* only on very young shoots, lanceolate-linear, scarious, obtuse. *Phyllodes* terete to sub-terete, 35-70(80) mm long, 1-1.3 mm diam., reclined, patent or erect, straight to shallowly curved, glabrous, more or less shiny, smooth but longitudinally wrinkled when dry, dark-green; apex

arcuate-acuminate to caudate-acuminate, the tip slender, (1.5)2-6(7) mm long, appressed to spreading puberulous on young phyllodes and commonly on mature phyllodes, rarely completely glabrous; pulvinus 1.5-3 mm long, slender, cylindric, glabrous, orange-coloured; nerves 8, sometimes appearing more numerous when dry, the nerves raised or more often obscured in drying by numerous, longitudinal, irregular furrows; gland not always evident, (5)7-14(24) mm above pulvinus, narrowly elliptic, 0.3-0.5 mm long. *Peduncles* 2 per axil, 4-5.5 mm long, somewhat appressed-puberulous or glabrous; basal peduncular bracts cucullate, rounded, more or less appressed-puberulous at least basally; heads globular, golden, (3.5)4-4.5(5.5) mm diam., 23-31-flowered; bracteoles spathulate, the blades rounded, somewhat concave, ciliate, dark-coloured. *Flowers* 5-merous. *Sepals c.* 1/2 as long as free petals, free, spathulate, ciliate. *Ovary* appressed-puberulous to sub-appressed villosulose. *Pods* linear, raised on alternating sides over and slightly constricted between seeds, 50-70 mm long, 2-3 mm wide, thinly crustaceous, straight, glabrous, shiny. *Seeds* longitudinally arranged in pods, elliptic, 2.5-3 mm long, 1.5 mm wide, with a unilateral, terminal constriction, dull, brown, the aril sub-terminal.

Selected specimens examined. WESTERN AUSTRALIA: 1-2 miles [1.6-3.2 km] N of Carnamah along Geraldton Highway, *T.E.H. Aplin* 54 (PERTH); *c.* 20 km E of Damboring, then 3 km S, *T.E.H. Aplin* 4864 (PERTH); 22 miles [35 km] E of Dalwallinu, *J.S. Beard* 7973 (NSW, PERTH); 6.6 km NW of Wongan Hills towards Piawaning, *R. Coveny* 7834 and *B.R. Maslin* (PERTH); 3.3 km E of Ravensthorpe-Hopetoun road on Elverdton Road, *R.S. Cowan* A760 and *B.R. Maslin* (PERTH); between Caron and Latham, *C.A. Gardner* and *W.E. Blackall* 758 (PERTH); 16 miles [25.6 km] W of Boondi, *J. Goodwin* 277 (PERTH); *c.* 3 km by road SE of Kondut on road to Cadoux, *L. Haegi* 1109 (NSW, PERTH); 21 km NW of Holt Rock on track to Hyden, *L. Haegi* 1214 (NSW, PERTH); Merredin, *M. Koch* 2742 (NSW, PERTH); 1.4 miles [2.2 km] S of Konnongarring, *B.R. Maslin* 1633 (CANB, PERTH); 6 km S of Tammin, *B.R. Maslin* 2319 (BRI, K, PERTH); Mount Desmond, *B.R. Maslin* 2567 (PERTH); 53 km N of Wubin towards Perenjori, *B.R. Maslin* 3182 (BM, PERTH); 10.5 km N of Bungalla towards Wyalkatchem, *B.R. Maslin* 3394, 3396 and 3396A (all PERTH); 1.6 km from Wubin towards Mount Magnet, *B.R. Maslin* 3529 (CANB, MEL, NY, PERTH); 14 km E of Grass Patch on Steddys Road, *P. van der Moezel* 66 (PERTH); Ponton Creek, 20.5 km E of Zanthus, *J. Taylor* 552 *et al.* (CANB, PERTH).

Distribution. Common in southwest Western Australia from near Carnamah south-southeast to the Cunderdin-Merredin area. A few populations occur outside this range, namely, near Holt Rock, *c.* 170 km southeast of Merredin (*L. Haegi* 1214), near Boondi, *c.* 190 km east of Merredin (*J. Goodwin* 277) and on Ponton Creek, 20.5 km east of Zanthus, *c.* 600 km east of Merredin (*J. Taylor et al.* 552); additionally, a variant from the Ravensthorpe Range and Grass Patch is discussed below.

Habitat. Grows in sand, gravelly or clayey sand and rocky or sandy loam on heath and sandplains with mallee eucalypts and wattles.

Flowering and fruiting periods. Flowers from (July) August-October; pods with mature seeds have been collected in December and January.

Typification. Maiden's publication gives November as the date of collection of the type but the NSW specimens record September as the correct month and we have adopted the latter.

Variation. Specimens of *A. fragilis* from the Ravensthorpe Range (e.g. *R.S. Cowan* A760 and *B.R. Maslin*, and *B.R. Maslin* 2567) and Grass Patch (*P. van der Moezel* 66) represent the one taxon and are attributed to *A. fragilis* on account of their phyllode length (> 3.5 cm) but they occur within

the geographic range of *A. uncinella*. They are similar to *A. uncinella* in having a half-united corolla and, to some extent, in the phyllode apex which is often glabrous but also often elongate as in *A. fragilis*. There is a need to examine more closely the significance of the petal union character in a comprehensive review of the *A. fragilis-A. uncinella* relationship. Another variant occurs near Bungalla, *c.* 10 km east of Kellerberrin (e.g. *B.R. Maslin* 3394); it is characterized by having phyllodes near the tip of the branchlets with the apex glabrous but some of the phyllodes farther down the branchlets with plumose tips.

Affinities. A highly variable species distinguishable, somewhat arbitrarily, from *A. uncinella* Benth. (see below), its closest relative, which generally occurs farther south, although the two overlap in the central wheatbelt from Bungalla to near Boorabbin (Boorabbin is *c.* 80 km east of Southern Cross). All characters vary to some extent but, in general, *A. fragilis* has longer phyllodes (mostly 3.5-7 cm), the apex of which terminates in a long to very long, delicate, gently curved, hairy tip (mostly 2-6 mm but up to 7 mm long); the pubescence on the tip varies from appressed to spreading; it is always present on juvenile phyllodes and usually persists on at least some of the mature ones. *Acacia uncinella* has shorter phyllodes (1-3.5 cm) generally with a shorter, sub-uncinate-mucronate tip (0.8-1.5 mm long) that is only minutely appressed-puberulous at first but commonly soon glabrescent. The petals of *A. uncinella* are mostly half-united but in *A. fragilis* this character appears sporadically without any obvious pattern except for the Ravensthorpe variant discussed above. The possibility of hybridization between the two species should receive serious attention, for there are collections in the zone of overlap (i.e. the central wheatbelt from Bungalla to Boorabbin) which cannot be confidently assigned to either taxon. Clearly much more detailed study is needed to elucidate this complex group and in the meantime it is considered prudent to retain the current classification and not pre-emptively effect name changes.

Conservation status. Widespread and not considered rare or endangered.

5. Acacia ophiolithica R.S. Cowan & Maslin, sp. nov.

Frutex rotundatus 0.3-2 m altus, ramulis teretibus ad leviter angulatis, glabris rubello-castaneis. *Phyllodia* teretia, oblique et abrupte mucronata, saepe rostriformia vel subuncinata, pulvino gracili, 1.5-2 mm longo, croceo, a laminam abrupte separato, laminis (20)25-36(45) mm longis, 0.7-1 mm diametro, erectis ad ascendentibus, rectis, glabris, pallido- ad vivido- vel atro-viridibus, 4 vel 8 nervis immersis perobscuris, glande saepe non manifesta, minuta, 6-14 mm supra pulvinum. *Pedunculi* 2 in quoque axilla, (5)7-13 mm longi, filiformes, glabri, pedunculorum bractea basali caduca, cucullata, glabra. Capitula globularia, 5 mm (3-3.5 mm in sicco) diametro, 10-15-floribus, bracteolis spathulatis, brevi-stipitatis et laminis ellipticis, ovatis vel lanceolatis, plus minusve concavis, ciliatis. *Flores* 5-meri, petalarum sepalis minus quam dimidiis longitudinis, discretis, lineari-spathulatis usque ad spathulatis, parce ciliatis, petalis discretis. *Legumina* linearia, 30-37 mm longa, 2.5-3.5 mm lata, deflexa, chartacea, recta vel leviter curvata, glabra, lucida, marginibus distincte incrassatis. *Semina* longitudinalia, oblonga usque ad elliptica, ad apicem unilateraliter constricta, 2.4-2.8 mm longa, 1.3-1.6 mm lata, subcompressa, lucido-brunnea, arillo sub-terminali.

Typus: adjacent to Jerdacuttup River on North Jerdacuttup Road, 10.5 km E of Ravensthorpe-Hopetoun road, Western Australia, 31 August 1980, *B.R. Maslin* 4789 (*holo*: PERTH 00149381: *iso:* AD, BRI, CANB, K, MEL, NSW, NY).

[*A. uncinella* auct. non Benth.: G. Bentham, Fl. Austral. 2: 341 (1864), as to the Maxwell specimen cited.]

Bushy, rounded *shrubs* 0.3-2 m tall. *Bark* light grey, smooth except fibrous at extreme base. *Branchlets* terete to slightly angled, glabrous, reddish-tan. New shoots vivid green, sub-glabrous. Stipules caducous, minute, triangular. *Phyllodes* terete, (20)25-36(45) mm long, 0.7-1 mm diam., slender, congested on branchlets, erect to ascending, becoming patent in age, straight, glabrous, green, occasionally slightly glaucous; apex narrowed, obliquely and often abruptly mucronate, often rostriform or sub-uncinate; pulvinus abruptly separated from phyllode-blade, very slender, terete, glabrous, orange-coloured, 1.5-2 mm long; nerves 4 or 8, immersed, very obscure; gland often not evident, 6-14 mm above pulvinus when present, plane, round or elliptic, minute. *Peduncles* 2 per axil, (5)7-13 mm long, filiform, glabrous; basal peduncular bract caducous, cucullate, glabrous; heads globular, bright light golden, 5 mm (3-3.5 mm dry) diam., 10-15-flowered; bracteoles spathulate with very short stipe and elliptic, ovate or lanceolate blade, more or less concave, ciliate. *Flowers* 5-merous, a few 4-merous interspersed. *Sepals* less than half the petal-length, free, linear-spathulate to spathulate, sparingly ciliate. *Petals* free. *Pods* linear, slightly raised over seeds on alternating sides, not constricted, 30-37 mm long, 2.5-3.5 mm wide, deflexed, chartaceous, straight or slightly curved, glabrous, shining, red-brown, the margins conspicuous, thickened. *Seeds* longitudinally arranged in pods, oblong to elliptic, constricted unilaterally at apex, 2.4-2.8 mm long, 1.3-1.6 mm wide, sub-compressed, glossy, brown; pleurogram U-shaped; areole tiny; aril sub-terminal.

Selected specimens examined. WESTERN AUSTRALIA: *c.* 13 km E of Ravensthorpe, 20 August 1979, *E.M.Bennett s.n.*(AD, K, MEL, NY, PERTH 00149322); 28.7km SE of Ravensthorpe, *M.A. Burgman* 2740 and *S. McNee* (PERTH); 11 km E of Ravensthorpe towards Esperance, *R.S. Cowan* A761 and *B.R. Maslin* (PERTH); Jerducuttup River elbow, *C.A. Gardner* 14083 (PERTH); 11 km E of Ravensthorpe towards Esperance, *B.R. Maslin* 3921 (B, DNA, PERTH, W) and 4053 (PERTH); 22.5 km E of Ravensthorpe on Highway No. 1 to Esperance, *B.R. Maslin* 5461 (BM, CANB, G, MO, PERTH, Z); W tributary of Oldfield River, *G. Maxwell s.n.* (MEL, NSW, PERTH 00149403 and 00149330).

Distribution. Restricted to and locally common in a small area east of the Ravensthorpe Range (slightly east of Ravensthorpe township) in the vicinity of the Jerdacuttup River, southwest Western Australia.

Habitat. On clay or clay-loam, sometimes rocky, on river banks and beneath mallee eucalypts, often forming dense populations, frequently on soils derived from serpentine.

Flowering and fruiting periods. Flowers from (August) September to October; pods with mature seeds have been collected in December.

Affinities. This is a very distinctive species in this group because of its habitat, slender, very obscurely 4- or 8-nerved phyllodes, long slender peduncles and small, relatively few-flowered heads. In overall appearance it is most like *A. uncinella* Benth. (see below) and Bentham (1864: 341) actually cited a Maxwell collection of the species from the Oldfield River area as *A. uncinella*. It is sympatric with and resembles in a general way *A. binata* Maslin (1978: 202) which has obscurely 3-nerved, obtuse phyllodes, larger heads in short 2-headed racemes and more or less coiled pods.

Conservation status. A Priority 2 taxon on the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The name of the species refers to its habitat, from *ophiolithicus*, Latin for the frequent substrate (soils derived from serpentine rock) of the plant.

6. Acacia uncinella Benth., Linnaea 26: 613 (1855)

Typus: interior of Western Australia, *J.S. Roe s.n.* (*holo*: K; *iso*: PERTH 00850012-fragment ex K).

Low, rounded *shrubs* 0.3-3 m tall, spreading 1-1.5 m across, with stems to 7 cm diam. *Bark* light grey, fibrous, smooth. *Branchlets* terete to slightly angled, glabrous or densely villose to more or less appressed-villose or appressed-puberulous, glabrescent, tan to brown-red at first, becoming grey. New shoots white- or yellow-appressed-puberulous or villose. *Stipules* only seen on youngest shoots, lanceolate-linear, obtuse, scarious, light brown. *Phyllodes* terete to compressed, 10-35 mm long, 0.7-1.5 mm diam., spreading to ascending or erect, straight or shallowly curved, sometimes sigmoidally, glabrous, glossy, light to dark green; apex mucronate, sometimes abruptly so, sub-uncinate, the tip 0.8-1.5 mm long, glabrous, minutely appressed-puberulous or puberulous and more or less glabrescent; pulvinus often abruptly separated, 1-2 mm long, glabrous or puberulous to appressed-puberulous; nerves 8, distant, raised to plane, often obscured by furrows in drying; gland 4-11(20) mm above pulvinus, depressed, elliptic, usually in angle of two coalescing adaxial nerves. *Peduncles* 2 per axil, (2)4-5 mm long, puberulous to appressed-puberulous to glabrous; basal peduncular bract cucullate, rounded, glabrous to appressed-puberulous; heads globular, golden, 2.8-4.5 mm diam., 16-30-flowered; bracteoles spathulate to peltate-spathulate, the blade rounded, puberulous, ciliate, concave. *Flowers* 5-merous. *Sepals* free, about half as long as petals, narrowly spathulate, ciliate. *Petals* about 1/2-united, occasionally free. *Ovary* appressed-puberulous. *Pods* linear, slightly raised over and constricted between seeds, 40-50 mm long, 2.5-3.5 mm wide, thin-crustaceous, straight, glabrous or sparingly appressed-puberulous. *Seeds* arranged longitudinally in the pods, elliptic or oblong-elliptic with terminal constriction, 2.5-3.5 mm long, 1.8-2 mm wide, sub-nitid, mottled dark and pale brown, nigrescent; aril sub-terminal, crested.

Selected specimens examined. WESTERN AUSTRALIA: near Boorabbin, *T.E.H. Aplin* 1935 (B, G, K, NSW, PERTH); Pingrup, *W.E. Blackall* 3033 (PERTH); 0.2 km E of Varley Gate on Rabbit Proof Fence, 32° 45'S, 119° 43' 30"E, *K. Bradby* 24 (PERTH); King Rocks, *P.E. Conrick* 1563 (PERTH); Wittenoom Hills, *N.N. Donner* 2888 (PERTH); *c.* 95 km WSW of Coolgardie on Great Eastern Highway, *N.N. Donner* 4556 (PERTH); *c.* 3 km N of Bungalla towards Wyalkatchem, *B.R. Maslin* 3390 (AD, BRI, CANB, G, MO, NSW, PERTH); 27 km E of Newdegate towards Lake King, *B.R. Maslin* 3863A (NY, PERTH); *c.* 2.5 km due NW of No Tree Hill, 20 km due NW of Hopetoun, *B.R. Maslin* 3892 (CANB, K, MEL, NSW, PERTH); 1 km E of Lake King, *B.R. Maslin* 4064A (PERTH); 18 miles [28.8 km] N of Ongerup, *K. Newbey* 2474 (PERTH); Hatter Hill, *K. Newbey* 3295 (MEL, MO, PERTH); 6.5 km E of Lake Ace, *K. Newbey* 8039 (PERTH); 33 km SW of Buningonia Spring, *c.* 70 km SSW of Zanthus, *K. Newbey* 8251 (PERTH); 18.5 km N of Hyden on road to Anderson Rocks, *J.G.* and *M.H. Simmons* 1309 (PERTH); 54 km W of Kumarl, *P.G. Wilson* 5698 (MEL, PERTH); 33 km E of Lake King at No. 1 Rabbit Proof Fence, *P.G. Wilson* 5750 (K, NSW, PERTH).

Distribution. Most common in an area bounded by Ongerup, east to the Wittenoom Hills (*c.* 50 km north-northeast of Esperance) and north to Anderson Rocks (*c.* 30 km north of Hyden), southwest Western Australia. Four populations have been recorded from slightly north of this area (and within the range of *A. fragilis*) from near Merredin, Trayning, Bungalla (*c.* 10 km east of Kellerberrin) and Boorabbin (*c.* 80 km east of Southern Cross); a collection from Buningonia Spring, south of Zanthus (*c.* 185 km northeast of Norseman), represents the most easterly record for the species.

Habitat. Sand, loam and rocky loam along road verges, mallee scrub and proteaceous shrubland, on slopes, hilltops and sandplains, often near salt flats or lakes.

Flowering and fruiting periods. Flowers from August to October; pods with mature seeds have been collected in December.

Affinities. Differs from the generally more northern *A. fragilis* Maiden & Blakely by very few, relatively constant characters. Differences are discussed fully under *A. fragilis*.

Variation. A population in the vicinity of Lake King may require formal recognition but so few collections are available that such a course is unjustified at present. It is recognized by its densely villose to appressed-puberulous new growth, the hairs at initiation being golden but very quickly becoming white; the heads are borne on these young branchlets. Most of the pubescence on the branchlets and on the pulvinus persists, sometimes even beyond the current year's growth. The peduncles also are hairy at flowering but generally glabrous by the time the pods are mature; the hairs vary from appressed to spreading and sometimes form a dense indumentum. There is also a tendency for the heads of the variant to be a little smaller, with fewer flowers, but in these characters there is overlap with the typical form.

Clearly, this species, along with *A. fragilis*, will be understood fully only with the acquisition of much more data, particularly from carefully conducted field observations.

Conservation status. Not under threat.

The "*Acacia dielsii* Group"

This "Group" comprises three species, *A. dielsii* E. Pritz., *A. obesa* R.S. Cowan & Maslin sp. nov. and *A. nivea* R.S. Cowan & Maslin sp. nov. Characters shared by these taxa include the following: phyllodes short (10-35 mm long), terete, innocuous, multistriate and normally glabrous; heads globular and few-flowered; flowers 5-merous; and seeds longitudinal in the pods. Relationships of the "Group" are not known.

Key to species of "*A. dielsii* Group"

1. Heads pedunculate
  2. Pods not undulate, breaking readily at narrow constrictions between the exarillate seeds; branchlets not resinous ..... 1. *A. dielsii*
  2. Pods undulate, not constricted between the arillate seeds; branchlets resinous ..... 2. *A. nivea*
1. Heads sessile ..... 3. *A. obesa*

1. Acacia dielsii E. Pritz., Bot. Jahrb. Syst. 35: 294 (1904)

Typus: in Avon district, 5 km S of Tammin, Western Australia, 21 May 1901, *L. Diels* 2859 (*iso*: PERTH 00748854-fragment ex B).

A. ewartiana W. Fitzg. ex Jean White in A.J. Ewart, Jean White & B. Wood, Proc. Roy. Soc. Victoria n. ser. 23, pt. 2: 287, pl. 50, figs 5-7 (1911). *Syntype*: Cowcowing, Western Australia, August and September 1904, *M. Koch* 998 (both MEL but *n.v.*, see Maslin & Cowan 1994a for discussion).

A. ewartiana W. Fitzg., J. Bot. 50: 19 (1912). *Lectotype*: Cowcowing, W.A., August 1904, *M. Koch* 998 (BM, *fide* Maslin and Cowan, 1994a); *isolecto*: K, MEL (2 sheets, *n.v.*), NSW, PERTH 00751618. *Paralectotype*: Cowcowing, W.A., September 1904, *M. Koch* 998 (MEL - *n.v.*, NSW, PERTH 00751596).

Shrubs 0.5-2 m tall. *Branchlets* terete or slightly angled, glabrous, occasionally tomentulose or ± sericeous. *Phyllodes* terete, rounded- or truncate-obtuse, minutely ± uncinate-mucronate, 10-35 mm long, 0.7-1.2 mm diam., inclined to erect, straight to curved, glabrous, sometimes glaucous, with 14-18, distant, raised nerves. *Peduncles* 2-4(7) mm long, 2 per axil, slender, glabrous; basal bracts persistent, cucullate, often glaucous; heads globular, 2.5-3.5 mm diam., dark-golden, aromatic, loosely (8)10-13(17) flowered. *Flowers* 5-merous; *sepals* 1/3-2/3-united, rarely free; *petals* 1/2-3/4-united. *Legume* raised over seeds and constricted to narrow isthmus between seeds, readily breaking into 1-seeded articles at the constrictions, to 3 cm long, 1.2-1.8 mm wide, thin-papery, straight to slightly curved, sparingly appressed-puberulous, articles fusiform, 4-5 mm long. *Seeds* arranged longitudinally in the pods, narrowly oblong-elliptic, 2.5-3 mm long, slightly glossy, mottled tan, exarillate.

Selected specimens examined. WESTERN AUSTRALIA: *c.* 4 km W of Newdegate on road to Lake Grace, *E.M. Canning* WA/68 7407B (PERTH); Mount Madden, *J. Goodwin* 224 (PERTH); 9 km NNE of Bruce Rock on road to Merredin, *B.R. Maslin* 6473 (CANB, PERTH, Z); Murchison River, *c.* 15 km E of North West Coastal Highway, 10 November 1984, *M. Whiting* and *J. Coxon s.n.*(PERTH 00684031).

Distribution. Occurs in a belt from the Murchison River (east of Kalbarri) south to the Newdegate area (Newdegate is *c.* 50 km east of Lake Grace), southwest Western Australia.

Habitat. Grows on sandy, loamy and lateritic soils in open scrub and shrubland.

Variation. There is considerable variation in some of the characters, especially the vestiture of the branchlets and the degree of union of perianth parts. In the north coastal part of the range, many of the collections are from plants with more or less appressed-puberulous branchlets. Only a little farther inland the more common, glabrous condition is found and it ranges south to the limit of the species; the type of *A. ewartiana* is of this variant. The type collection of *A. dielsii* is from the middle of the geographic range and it has tomentulose branchlets; one other collection at PERTH, labelled *Diels* and *Pritzel* 157 and made in the same month and year at the same location (possibly an isotype or paratype) has exactly the same morphology as the type.

Affinities. A very distinct species by virtue of the deeply constricted, easily fragmented pods and exarillate seeds, characters that reliably separate it from its nearest relative, *A. nivea* R.S. Cowan & Maslin (see under *A. nivea* below for discussion).

Conservation status. Not under threat.

2. Acacia nivea R.S. Cowan & Maslin, sp. nov.

Frutex 40-100 cm altus, 60-170 cm expansus, ramulis teretibus, dense puberulis vel strigulosis, pilis appressis vel sub-erectis, in resina inclusis, resina sicco saepe alba. *Stipulae* plusminusve persistentes, minutae, triangulares, fuscatae, circa 0.5 mm longae. *Phyllodia* teretia, rotundato-

obtusa et excentrice micro-mucronulata, (10)13-18(20) mm longa, 0.8-1.2 mm diametro, inclinata ad erecta, recta vel leviter arcuata, glabra, demum resinosa, nervis 12-16, immersis vel solum leviter elevatis. *Pedunculi* glabri, 2 per axillam, 2-4.5 mm longi, pedunculorum bracteis basalibus persistentibus, triangularibus ad late ovatis, acutis, circa 0.5 mm longis, leviter concavis; capitula globularia, 2.5-3 mm diametro, 9-12-floribus. *Flores* 5-meri. *Sepala* petalaque plerumque discreta sed raro sepala ad basem connata. *Legumina* (sub-matura) linearia, undulata, alternatim supra semina valde elevata, 30-35 mm longa, 3 mm lata, chartacea vel tenuiter coriacea, leviter curvata, marginibus incrassatis. *Semina* (immatura) longitudinalia, arillo laterali.

Typus: about 23 km E of Mount Madden, Western Australia, 6 August 1968, *P.G. Wilson* 6840 (*holo*: PERTH 00684139; *iso*: CANB, K).

Low-spreading to domed, ± dense *shrubs* 40-100 cm tall and 60-170 cm across. *Branchlets* terete, densely puberulous or strigulose with very short, straight, appressed to sub-erect hairs which soon become imbedded in a hard, normally white, resin. *Stipules* more or less persistent, minute, triangular, dark-coloured, *c.* 0.5 mm long. *Phyllodes* terete, (10)13-18(20) mm long, 0.8-1.2 mm diam., inclined to erect, straight to slightly arcuate, glabrous, becoming resinous, dull medium-green or grey-green; apex rounded-obtuse and excentrically micro-mucronulate; pulvinus abruptly separated from phyllode-blade, *c.* 1 mm long; nerves 12-16, fine, plane or only slightly raised; gland obscure, 3-8 mm above pulvinus. *Peduncles* 2 per node, 2-4.5 mm long, glabrous; basal peduncular bract persistent, triangular to broadly ovate, *c.* 0.5 mm long, shallowly acute, concave, dark-coloured, ciliolate; heads globular, golden, 2.5-3 mm diam., 9-12-flowered; bracteoles spathulate with oblate, concave, ciliolate blade. *Flowers* 5-merous. *Sepals* 1/4-1/3 as long as petals, free or rarely up to 1/3-united, obovate to oblanceolate, dark-coloured, ciliolate. *Petals* elliptic, free, glabrous. *Ovary* appressed-puberulous. *Pods* (slightly immature) linear, undulate, strongly raised over seeds on alternate sides, 30-35 mm long, 3 mm wide, chartaceous or thinly coriaceous, slightly curved, glabrous, margins thickened. *Seeds* (sub-mature) longitudinally arranged in pods; pleurogram semicircular; the aril lateral and half as long as seed.

Selected specimens examined. WESTERN AUSTRALIA: 14 km W of Grass Patch, 13.25 km W of Norseman-Esperance Highway, on Grass Patch Road, *M.A. Burgman* and *S. McNee* 1883 (PERTH); Mount Madden, *J. Goodwin* 224 (PERTH); Frank Hann National Park, *D. Monk* 115 (PERTH); 30 km W of Ponier Rock, *c.* 80 km SW of Balladonia Motel, Eyre Highway, *K. Newbey* 7315 (PERTH); 0.7 km N of Mount Andrew, *c.* 115 km SE of Norseman, *K. Newbey* 7705 (PERTH); 36 km E of Lake King, *K. Newbey* 9475 (MELU, PERTH), *K. Newbey* 9475-1 (MELU, PERTH) and *K. Newbey* 9475-2, 3, 4, 5 and 6 (all PERTH); 29 km N of Lake King on road from Lake Varley, *M.H. Simmons* 1334 (PERTH); 10 km due S of Clyde Hill, *H. Smolinski* (PERTH 00612928).

Distribution. Most collections have been made in the Lake King area, especially to the north, east and southeast of the township. It also occurs southeast to an area *c.* 40 km north-northwest of Munglinup (Munglinup is *c.* 75 km east-southeast of Ravensthorpe) and east to near Grass Patch (*c.* 70 km north of Esperance), Clyde Hill (*c.* 110 km northeast of Esperance) and in the Mount Andrew-Ponier Rock area (southwest of Balladonia), southwest Western Australia.

Habitat. Grows on sand, sandy loam or clay in open low woodland, open mallee shrubland (often with *Eucalyptus transcontinentalis* Maiden or *E. eremophila* (Diels) Maiden) and open scrub.

Flowering and fruiting periods. Flowers in August and September; pods with sub-mature seeds have been collected in December.

Affinities. It is not surprising that this species has been confused with *A. dielsii* E. Pritz. (see above), for they are superficially very similar, the most diagnostic features being the type of fruit. In *A. dielsii* the pods are very thin and brittle, less than 2 mm wide, not undulate, and break readily at the very deep constrictions between the exarillate seeds. Sterile specimens of *A. dielsii* can be distinguished from *A. nivea* by the latter's resinous branchlets, with the resin commonly drying white, and the tendency for the phyllodes to have a more obvious tip. In flower the two species can be separated by the normally united sepals and petals of *A. dielsii*, as well as by its larger, cucullate basal peduncular bracts. Furthermore, in *A. dielsii* the branchlets are commonly glabrous. From *A. obesa* R.S. Cowan & Maslin (see below), another relative, the new species can be distinguished by its pedunculate heads, free petals and white-resinous branchlets. Also superficially similar to *A. pinguiculosa* subsp. *teretifolia* R.S. Cowan & Maslin (ms name, in prep.) which has thicker, 6-8-nerved phyllodes and biconvex pods.

Conservation status. Not considered to be threatened.

Etymology. The white-resinous nature of the branchlets provides the basis for the name, from *niveus*, Latin for snowy or snowy white.

3. Acacia obesa R.S. Cowan & Maslin, sp. nov.

Frutex 0.3-0.6(1) m altus, ramulis teretibus, tomentulosis vel interdum appresso-puberulis. *Stipulae* persistentes, 0.6-1.8 mm longae. *Phyllodia* teretia, rotundato-obtusa et saepe minute mucronulata, vulgo leviter ad valde curvata sed raro aliquot recta interspersa, pulvino tomentuloso vel appresso-puberulo, laminis (10)15-25 mm longis, 1.2-1.75 mm diametro, glabris, raro tomentulosis et glabrescentibus, 12-16-nervatis, nervis elevatis, glande minuta, basali. Capitula sessilia, globularia, diluto-lutea, 3.5-4 mm diametro, 9-14-floribus, bracteolis unilateraliter peltatis. *Flores* 5-meri. *Sepala* 2/3-3/4-connata, zona marginali appresso-puberula, pilis rubris, minutissima. *Legumina* linearia, biconvexa, 20-40 mm longa, 2-2.5 mm lata, coriacea, valde curvata, glabra vel ad basem puberula vel ubique puberula. *Semina* longitudinalia, quadrato-rotundata, 1.5-1.8 mm longa, 1.3-1.5 mm lata, 1 mm crassitie, lucida, maculata, arillo terminali, magno.

Typus: 21 miles [33.6 km] E of Hyden, Western Australia, 14 July 1970, *B.R. Maslin* 550 (*holo*: PERTH 00158488; *iso*: BRI, CANB, K, MEL, NY).

Low, spreading *shrubs* 0.3-0.6(1) m tall. *Branchlets* terete, tomentulose or occasionally appressed-puberulous (hairs straight) with intermingled red or black micro-hairs. *Stipules* persistent, triangular to subulate, 0.6-1.8 mm long, tomentulose. *Phyllodes* terete, (10)15-25 mm long, 1.2-1.75 mm diam., normally thick, ascending, shallowly to strongly curved but sometimes a few ± straight ones interspersed, glabrous, rarely tomentulose and glabrescent; apex rotund-obtuse, often minutely mucronulate; pulvinus 1-1.5 mm long, indumentum as on branchlets; nerves 12-16, raised; gland basal, not always evident, minute. Heads sessile, globular, pale golden, 3.5-4 mm diam., 9-14-flowered; bracteoles unilaterally peltate, the stipe short, the blade oblate-ovate, ciliolate. *Flowers* 5-merous. *Sepals* 1/2-2/3 petal length, 2/3-3/4-united, lobes more or less triangular, acute to sub-obtuse, with a marginal band of red, appressed micro-hairs. *Petals* free or weakly coherent in lower half. *Ovary* papillate-puberulous, appressed, red micro-hairs sometimes also present. *Pods* linear, biconvex, 20-40 mm long, 2-2.5 mm wide, coriaceous, strongly curved, becoming once- or twice-coiled after dehiscence, glabrous except puberulous basally or generally puberulous. *Seeds* longitudinally arranged in pods, quadrate-rotund, 1.5-1.8 mm long, 1.3-1.5 mm wide, 1 mm thick, the lateral faces flattened, glossy, mottled dark-tan on very pale tan; pleurogram U-shaped; aril nearly as long as the seed.

Selected specimens examined. WESTERN AUSTRALIA: 5 miles [8 km] E of East Hyden Wheat Bin, *M. Barrow* M19 (PERTH); 27 km N of Lake Grace towards Kulin, *B.R. Maslin* 4070 (PERTH); Griffins Find, 1979, *R.F. Maslin s.n.*(PERTH 00683035); 7 miles [11.3 km] W of Lake Grace, *K. Newbey* 1621 (PERTH) and 1621D (AD, G, PERTH); *c.* 40 km E of Hyden, Lake Liddelow Nature Reserve 29910, 23 July 1986, *L. Silvester* (PERTH 00841633); 1 km S of Lake King township, *P.G. Wilson* 6940 (NSW, PERTH).

Distribution. Occurs in scattered localities in Lake Grace, Hyden and Lake King areas of southwest Western Australia.

Habitat. Grows in sand and gravelly loam in open low woodland, mallee and heath.

Flowering and fruiting periods. Flowers from July to September; pods with mature seeds have been collected in December.

Affinities. *Acacia dielsii* is related to, but readily distinguished from, *A. obesa* by its pods and seeds (see discussion under *A. nivea* above), peduncles mostly 2-4 mm long, branchlets commonly glabrous and phyllodes more slender (0.7-1.2 mm diam.). There is a distinct superficial resemblance between *A. obesa* and *A. pinguiculosa* subsp. *teretifolia* R.S. Cowan & Maslin (ms name, in prep.) but that taxon has 6- or 8-nerved phyllodes, pedunculate heads and differently-shaped, smaller seeds. Likewise, *A. arcuatilis* R.S. Cowan & Maslin (ms name, in prep.) superficially resembles *A. obesa* but is readily distinguished by its 8-nerved phyllodes, 4-merous flowers and straight pods which are 1.5-2 mm wide.

Discussion. The short, plump, finely multistriate phyllodes and sessile, few-flowered heads are characteristic of this species. In a variant from along Kulin Road north of Lake Grace (*B.R. Maslin* 4070, PERTH) the phyllodes are loosely tomentulose at first but glabrescent; all the other collections have phyllodes glabrous, except for the pulvinus. This variant also generally has puberulous pods, whereas the old valves on the holotype sheet are glabrous except at the very base. In *Wilson* 6940 (PERTH), the branchlet pubescence is appressed but otherwise the collection is identical with the remainder of the material.

Conservation status. A Priority 3 taxon on the Department of Conservation and Land Management's Declared Rare and Priority Flora List.

Etymology. The corpulent phyllodes of this species are the basis for the name, from *obesus*, Latin for plump or fat.

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